EXHIBIT G

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(54) **COLLAPSIBLE INFANT SUPPORT**

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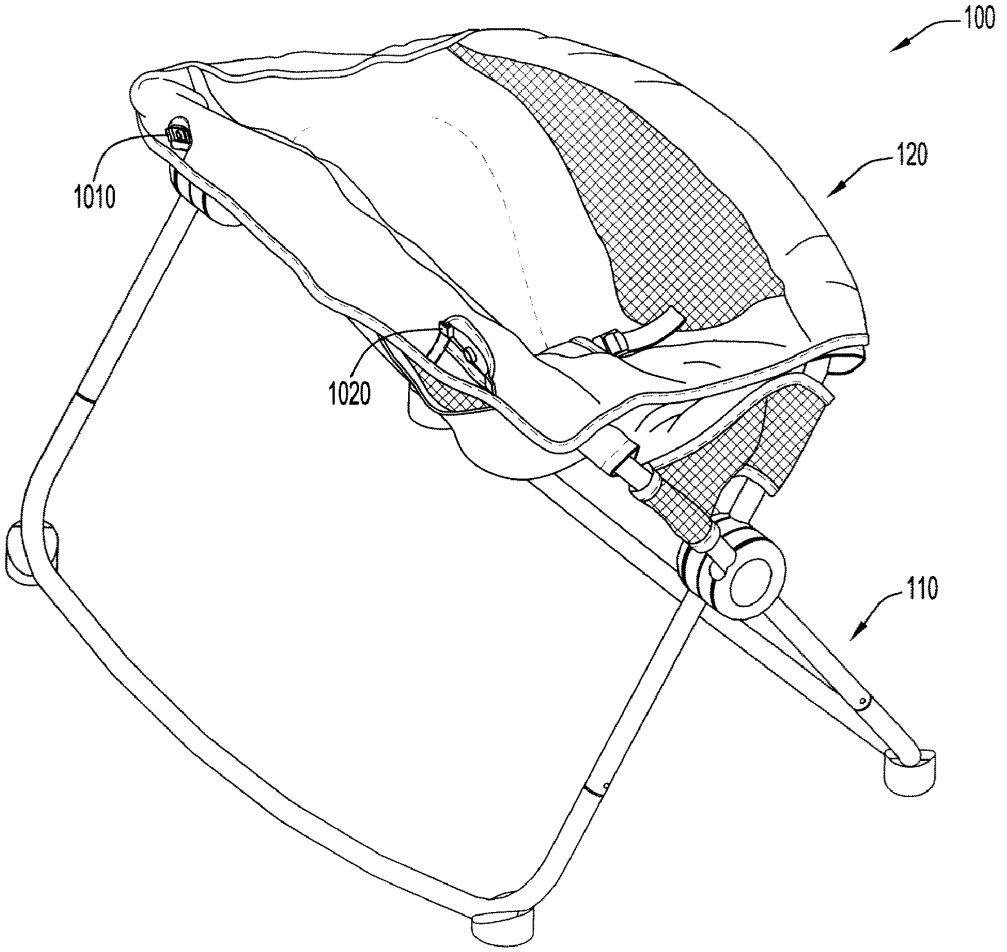
(52) **U.S. Cl.** **297/16.1**; 5/120; 297/271.5

(57) **ABSTRACT**

The present invention is directed toward an infant support including a frame and an infant seat. The frame includes a first frame member pivotally coupled to a second frame member. The footers of the frame member are curved to permit the rocking of the frame on its support surface. The seat includes angled wall portions that define an offset lowest point. With this configuration, a child placed within the seat is safely positioned within the seat such that the child experiences a front-to-back rocking motion.



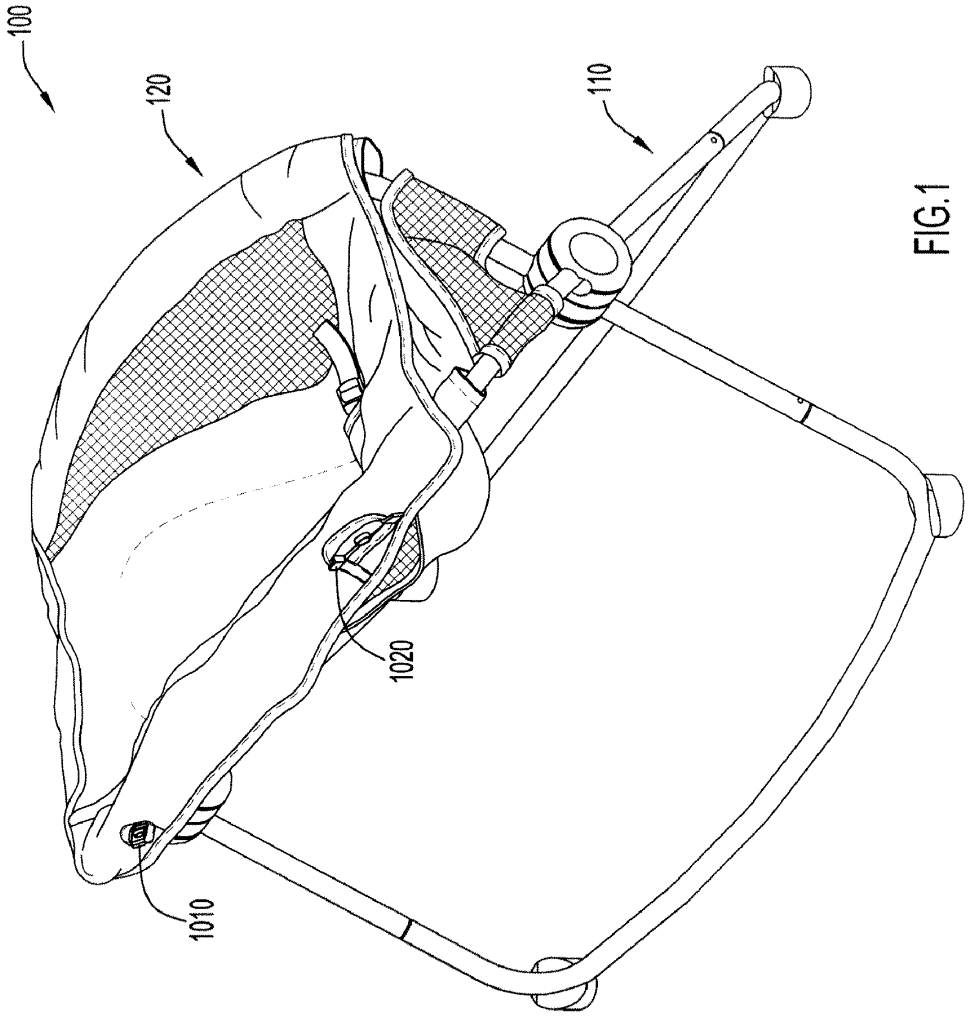


FIG.1

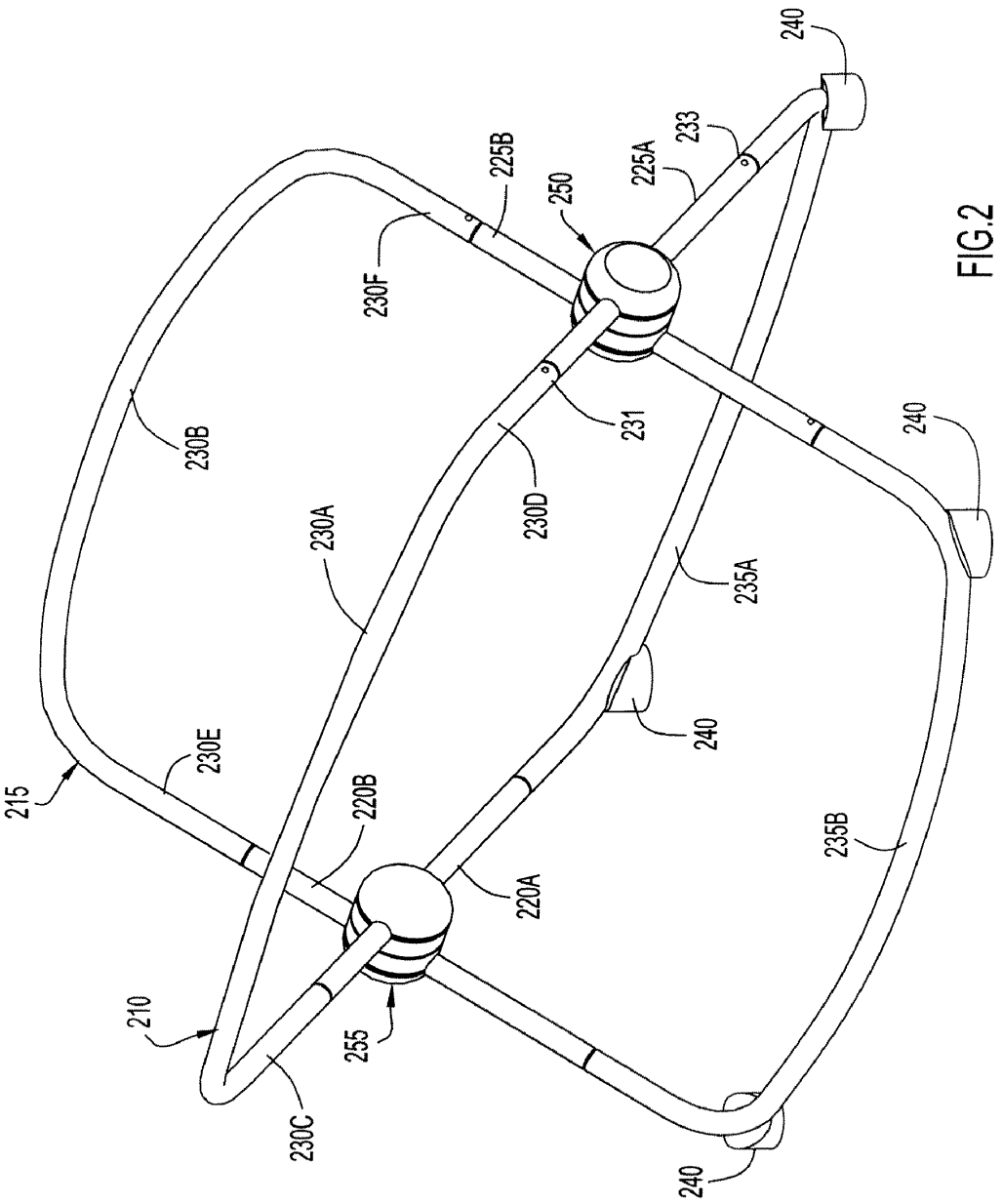

240
233
225A
225B
250
230F
230B
231
230D
230A
235A
240
240
230E
215
220B
220A
235B
210
255
230C
240

FIG.2

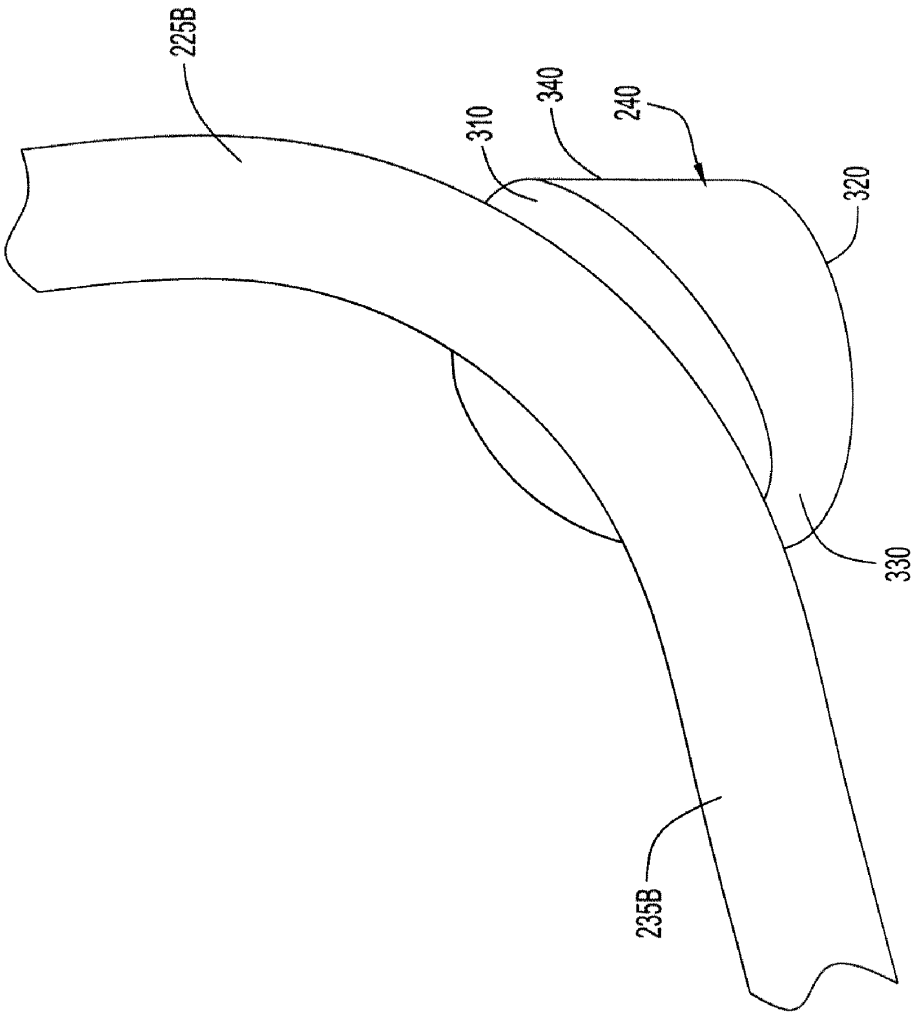


FIG.3

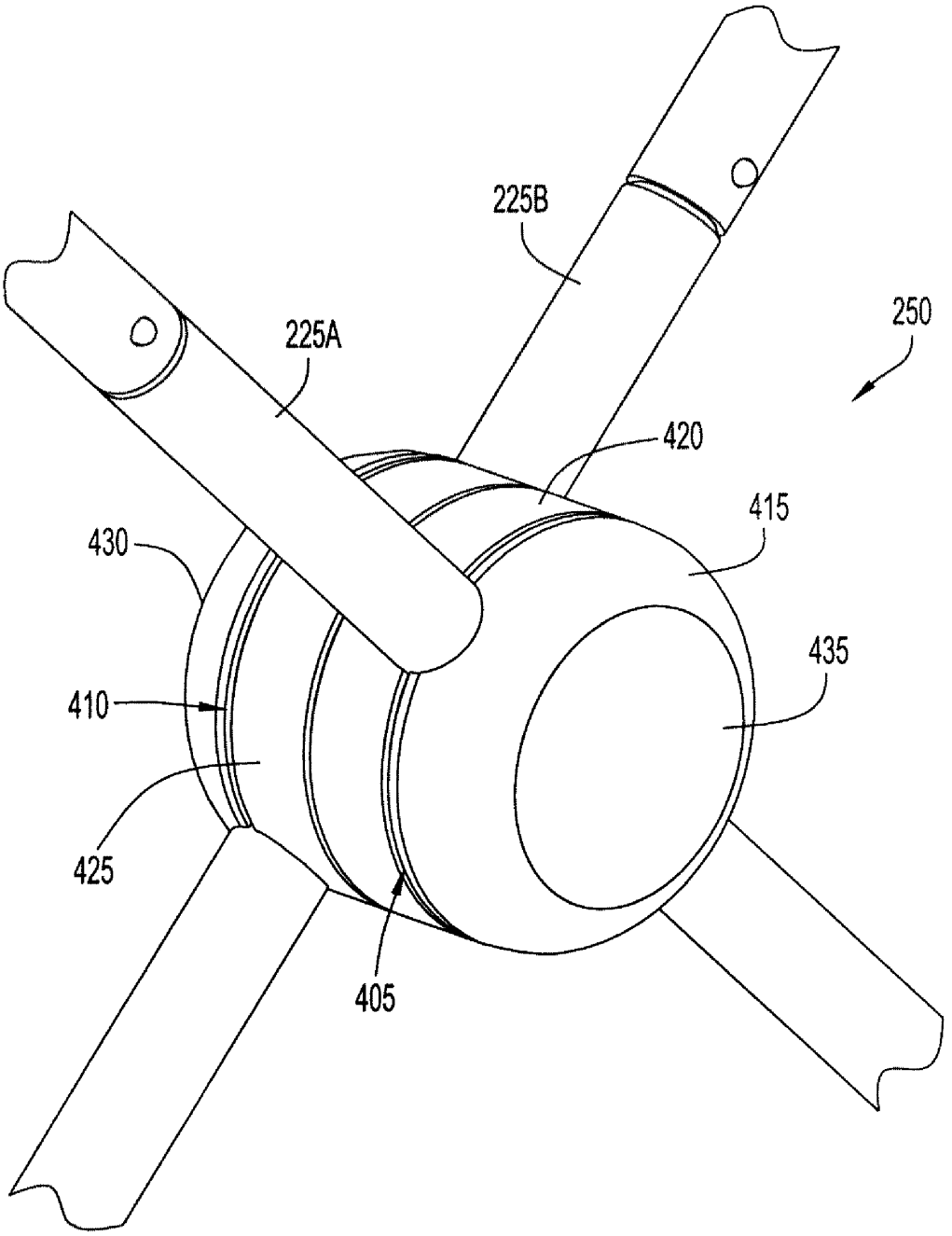


FIG.4A

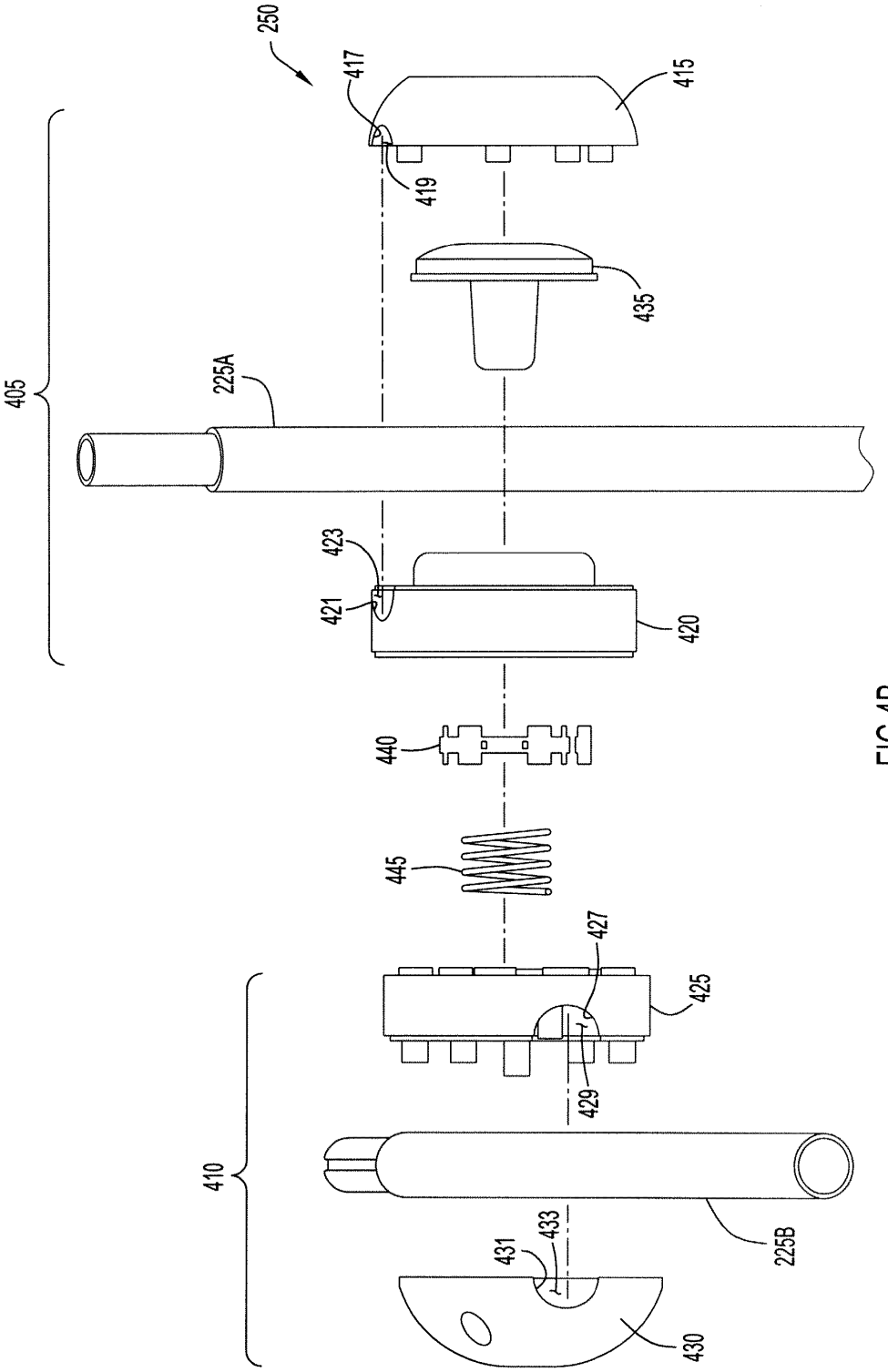

250
417
415
419
435
405
225A
423
421
420
440
445
427
425
429
410
225B
431
433
430

FIG.4B

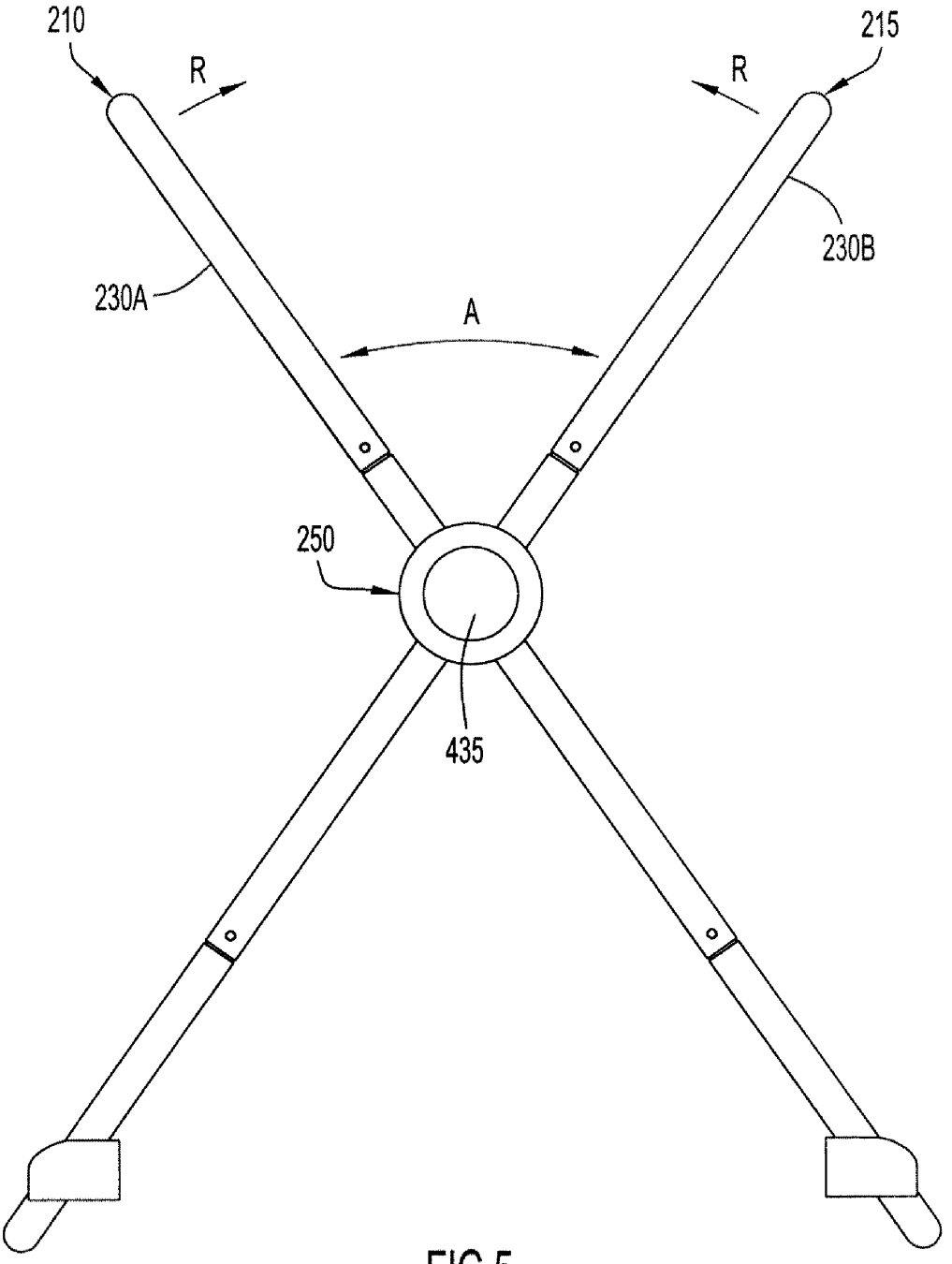


FIG.5

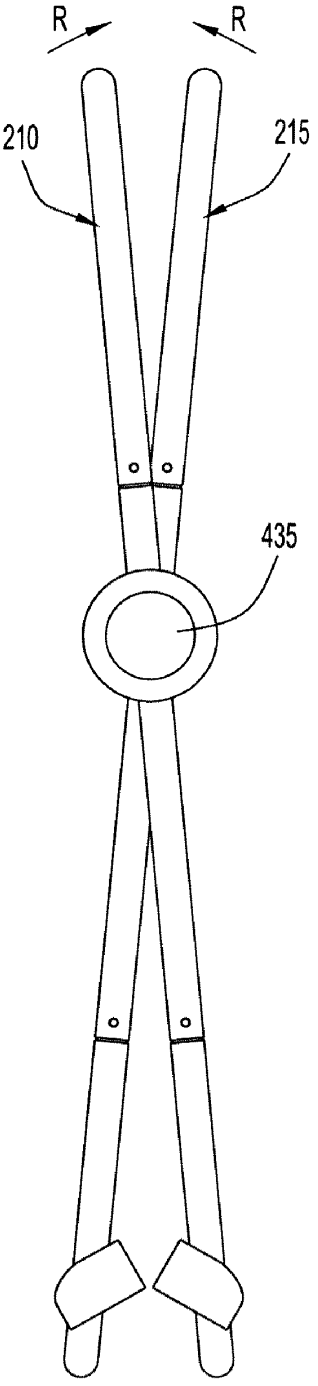


FIG.6A

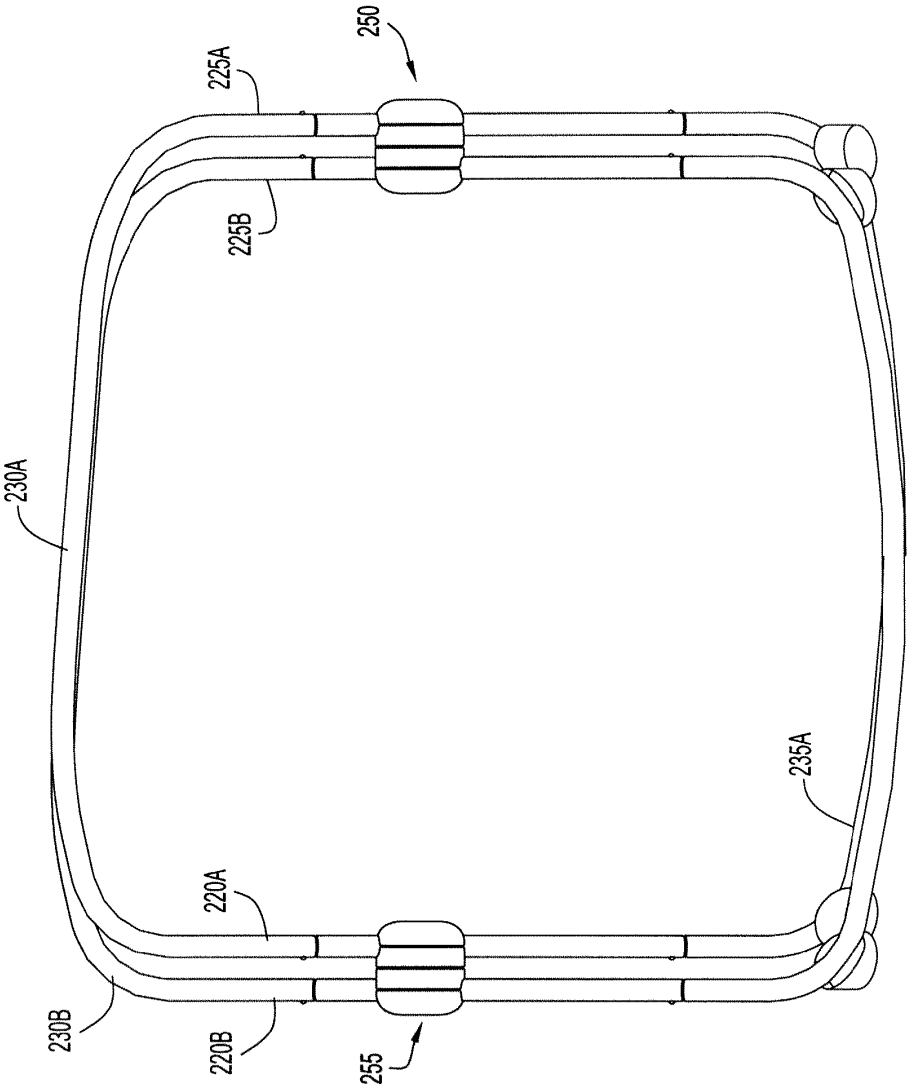
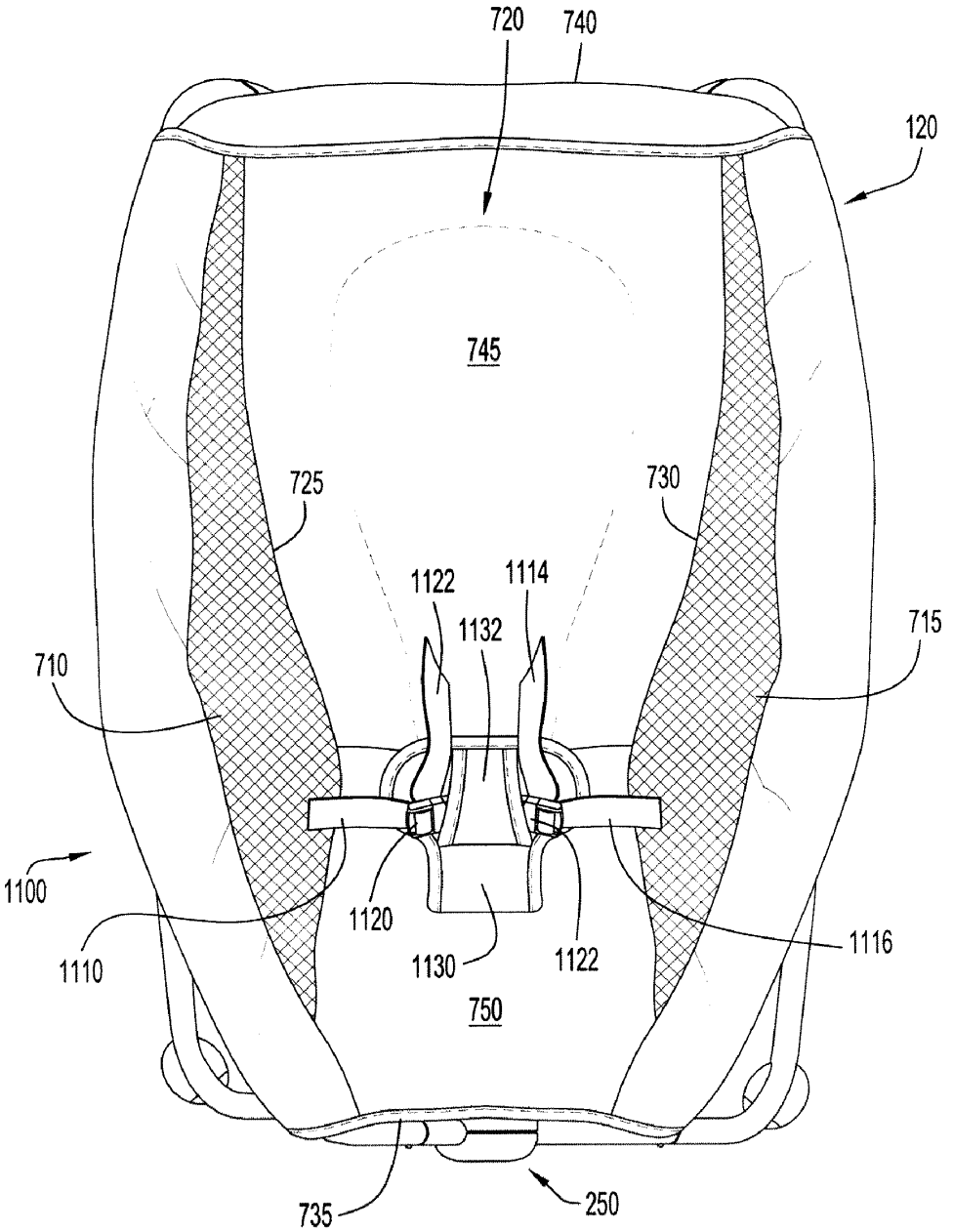


FIG.6B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740
120
745
725
730
1122
1114
1132
715
710
1100
1120
1116
1110
1130
1122
750
735
250

FIG.7A

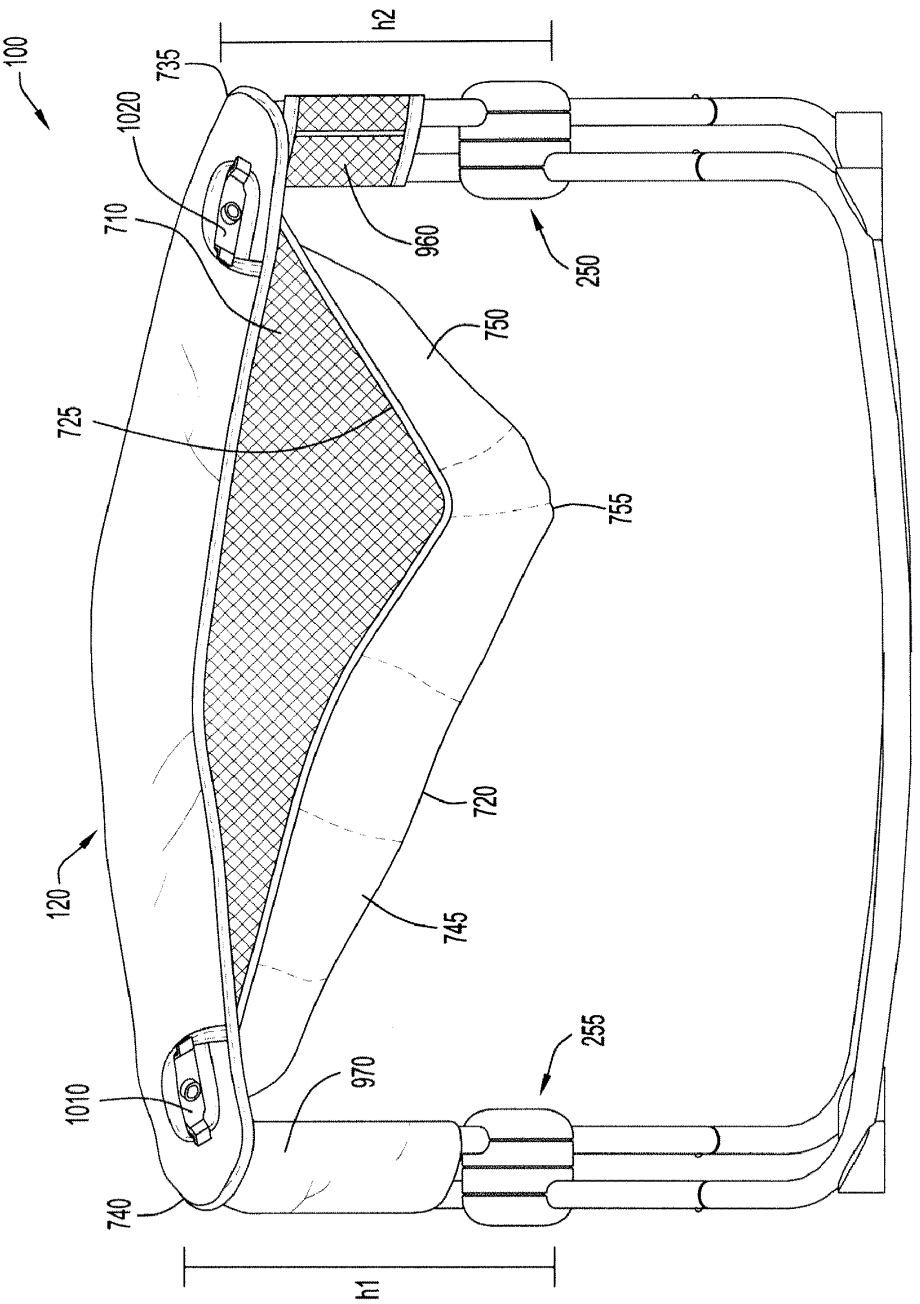

100
h2
735
1020
710
960
250
750
725
755
720
120
745
255
970
1010
740
h1

FIG.7B

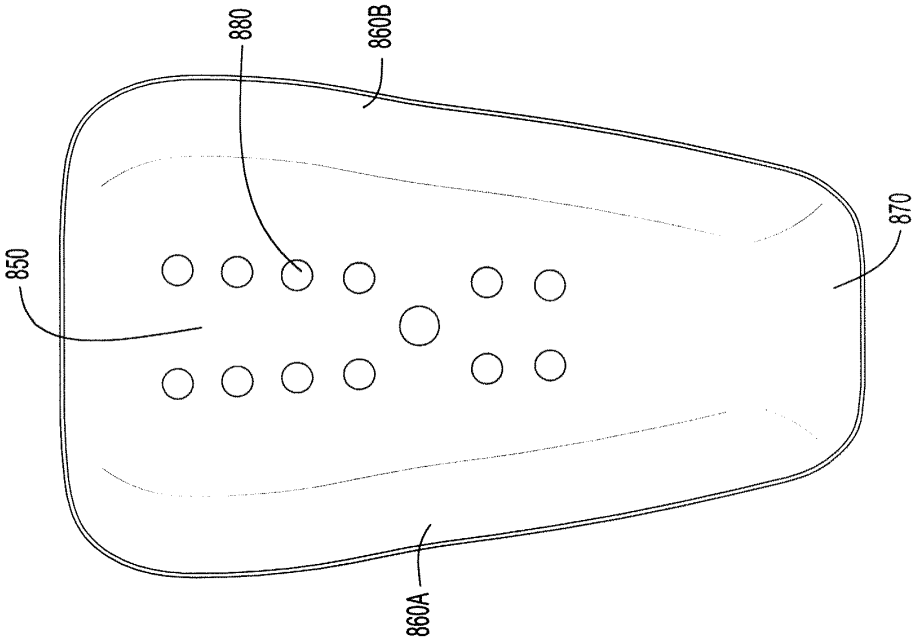


FIG.8B

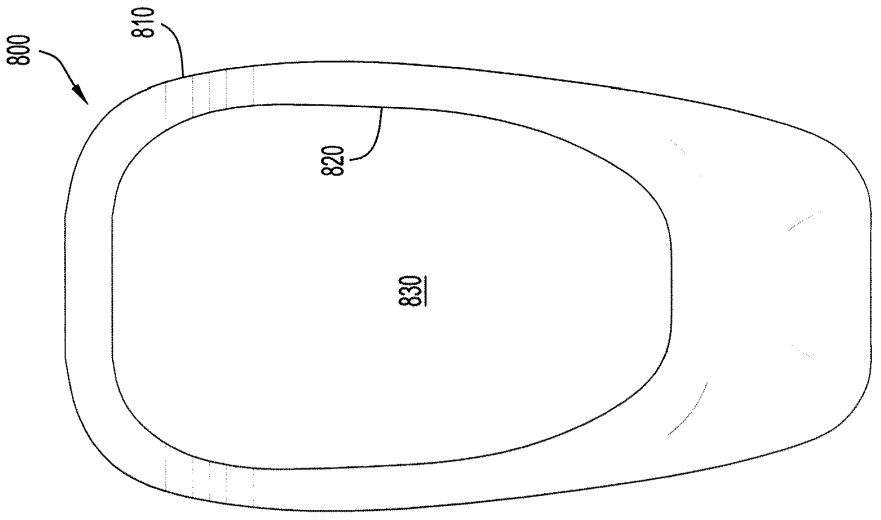


FIG.8A

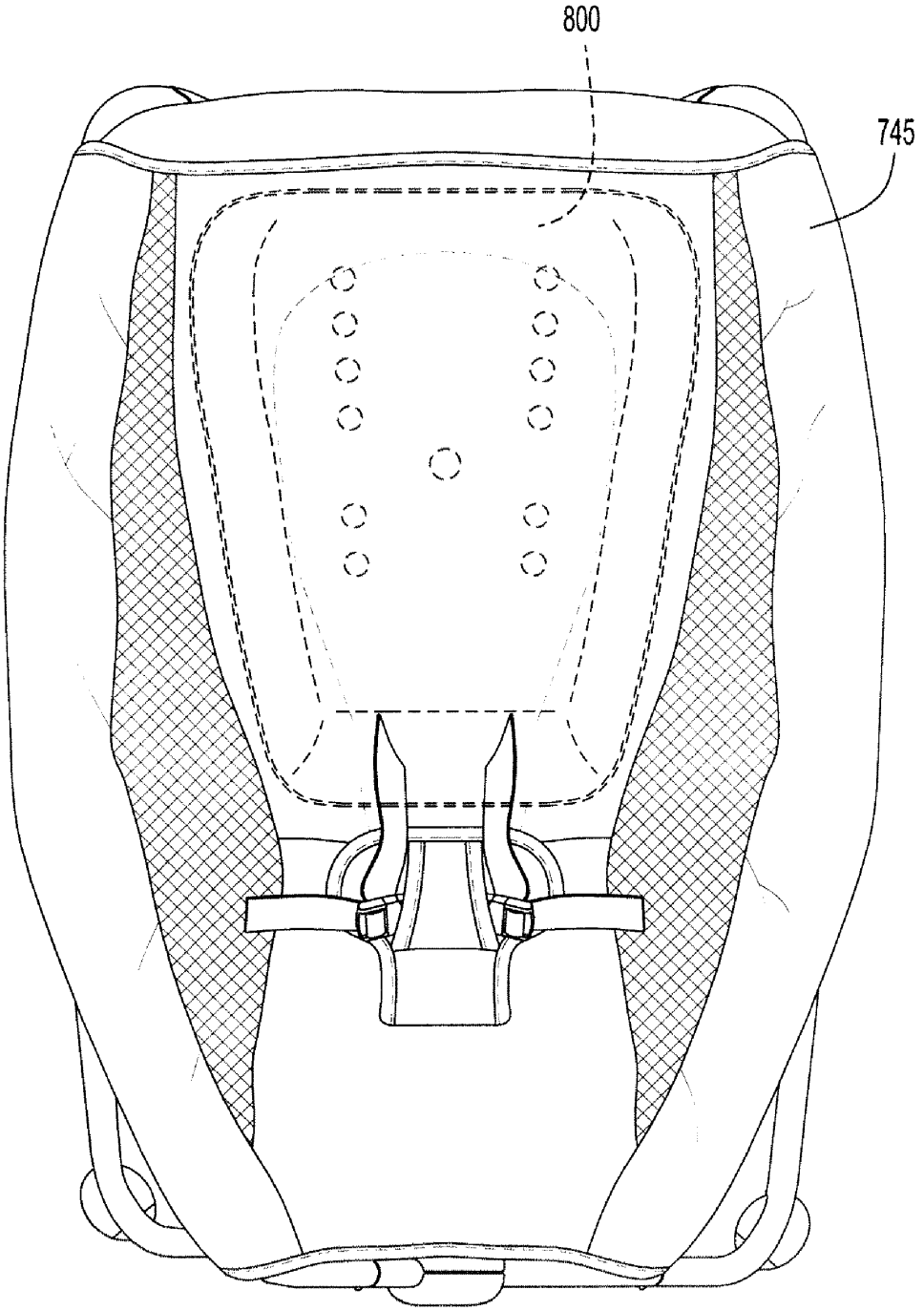


FIG.8C

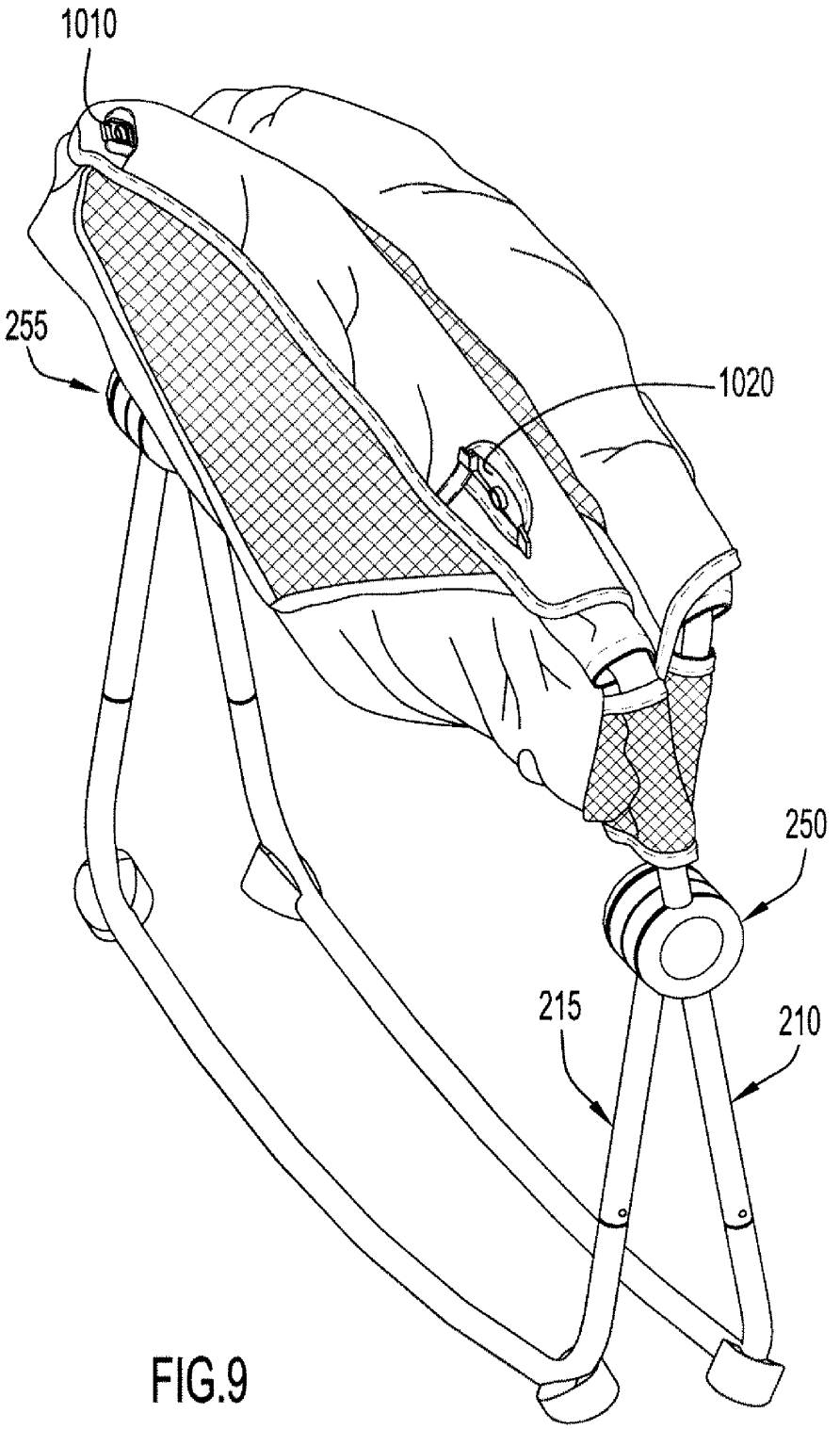


FIG.9

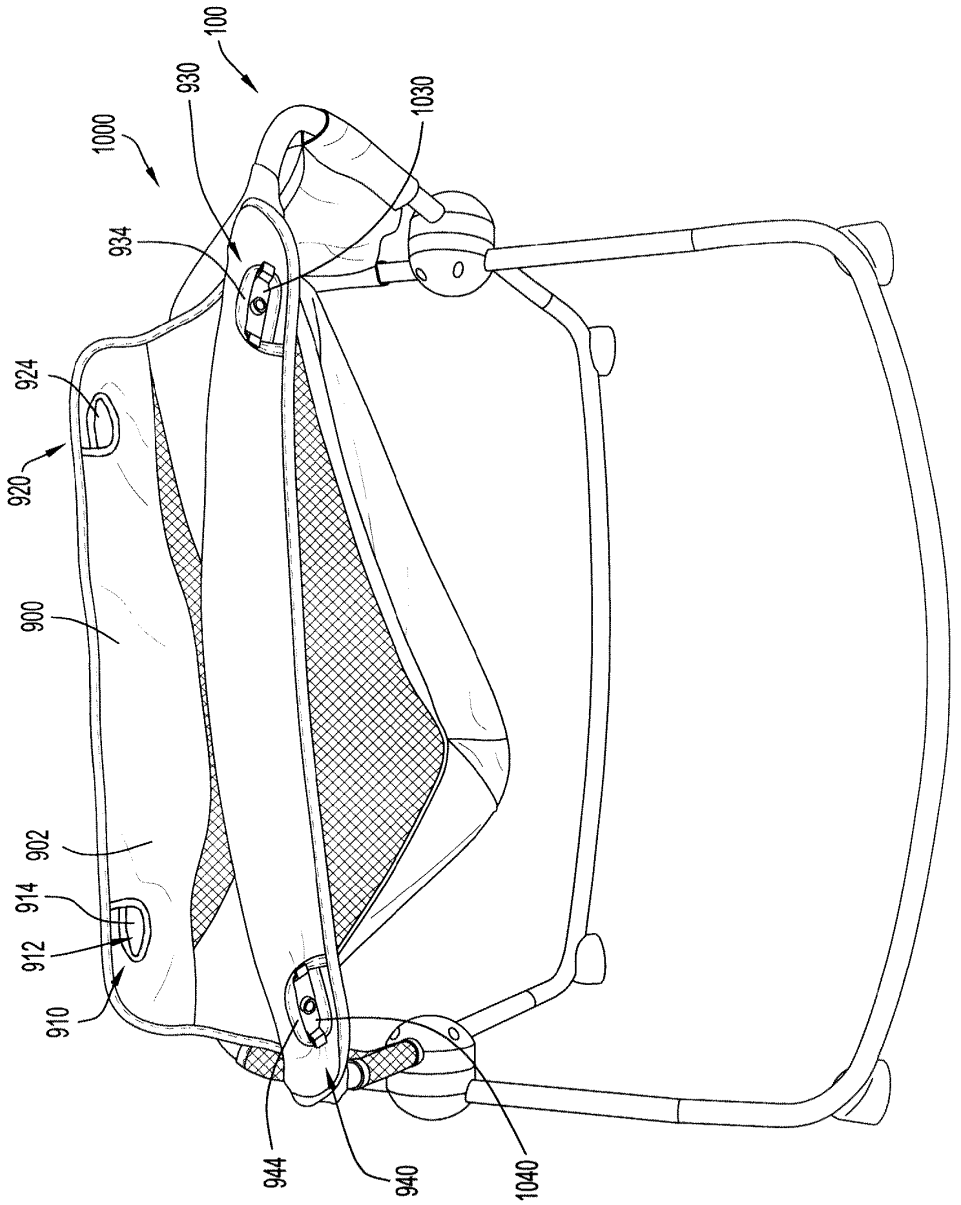


FIG.10

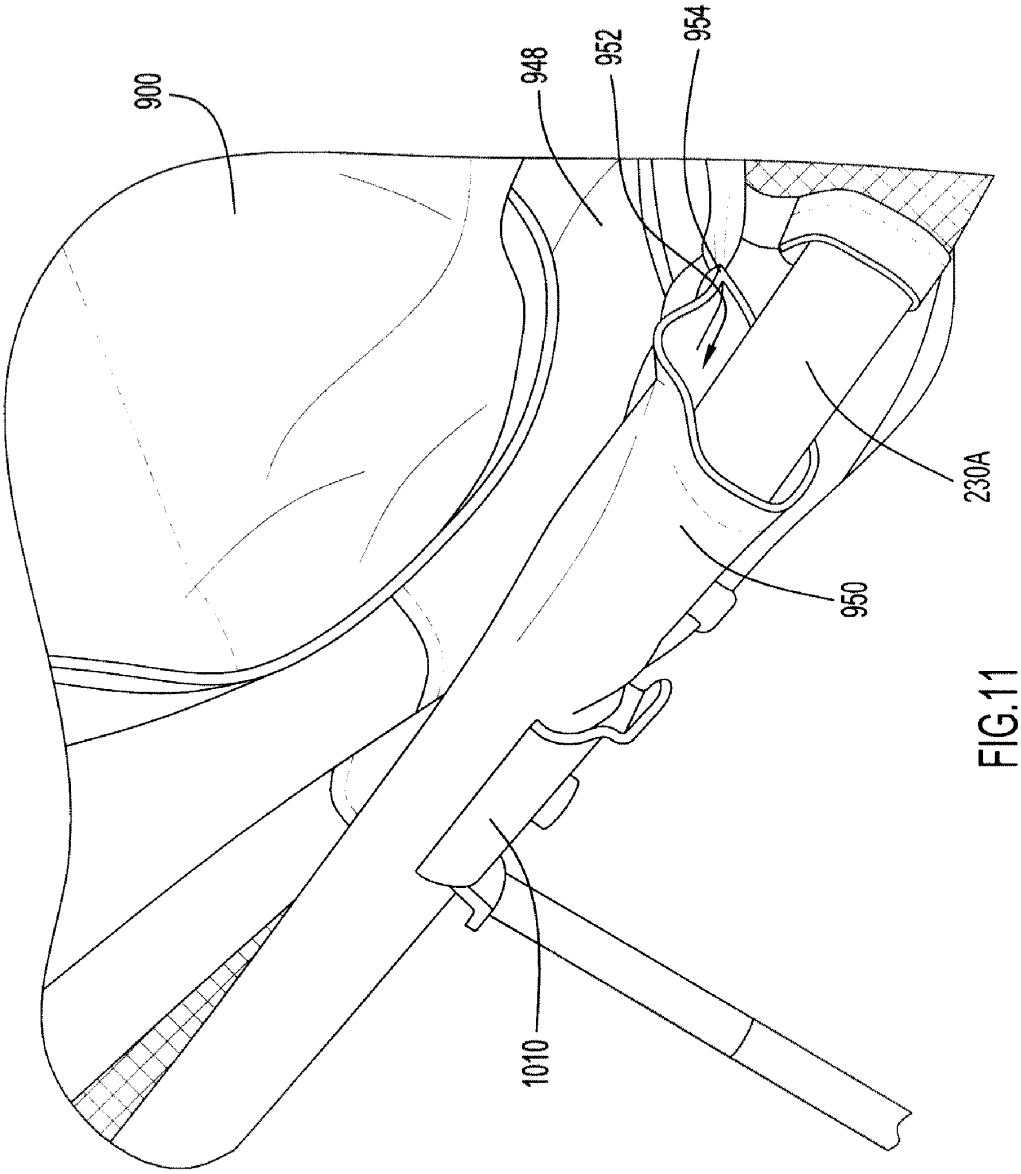


FIG.11

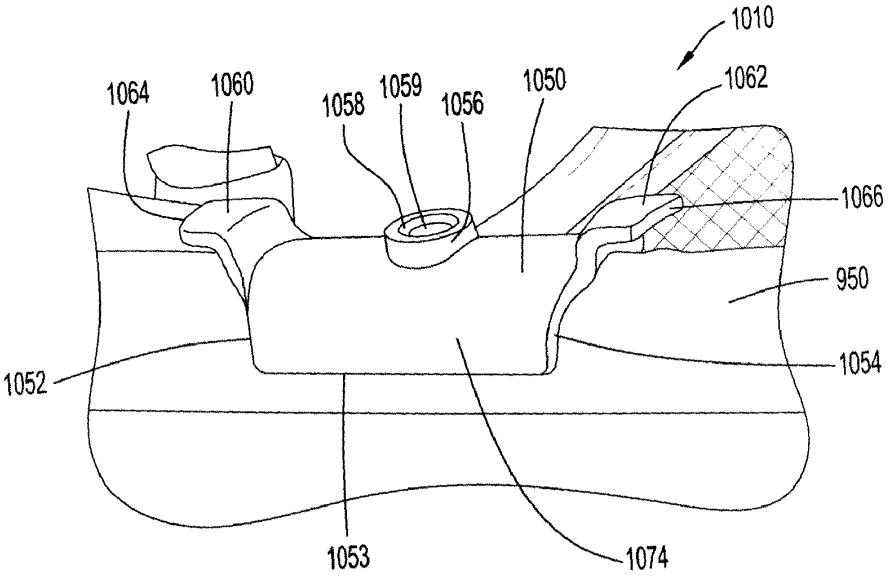


FIG.12

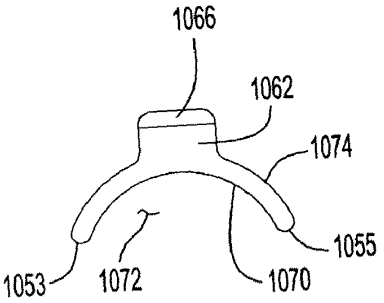


FIG.13

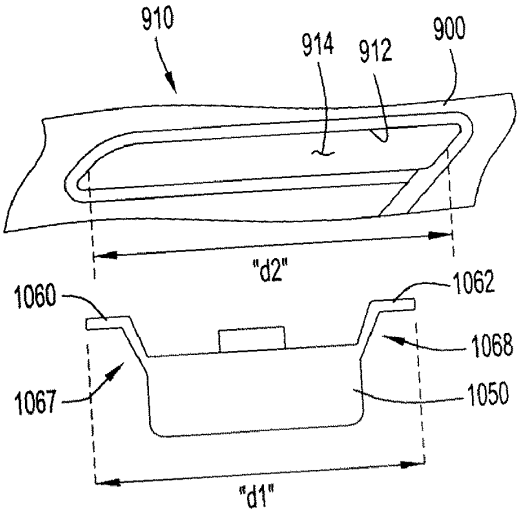


FIG.14

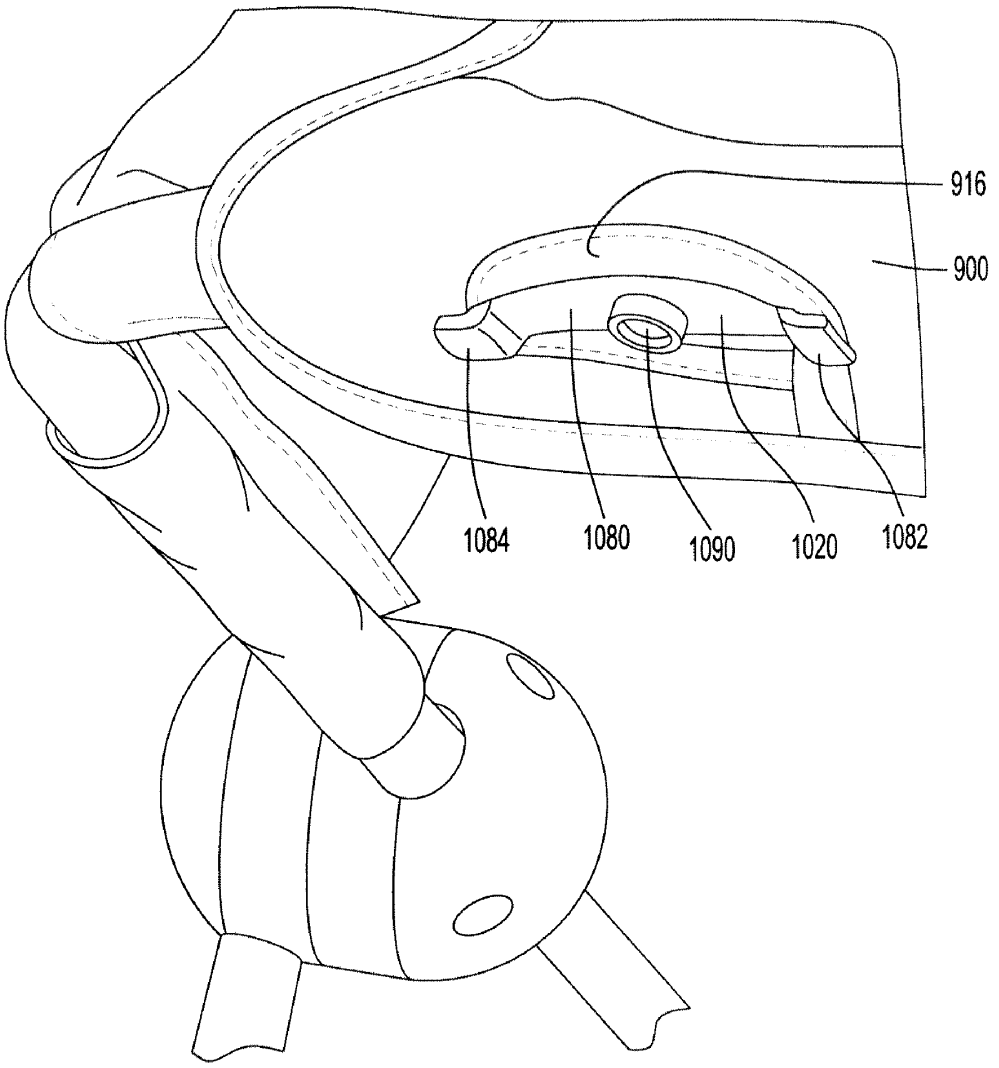
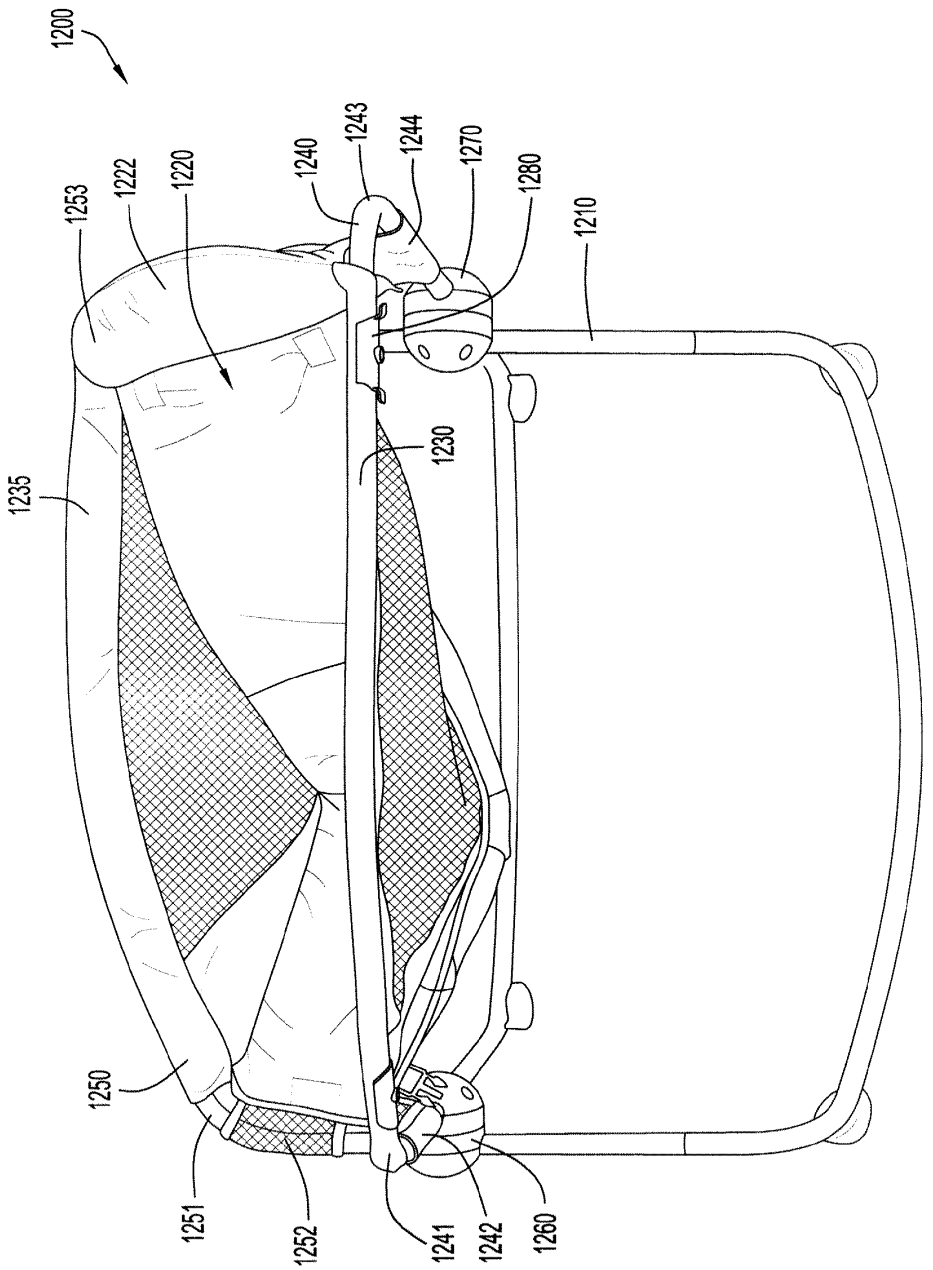


FIG.15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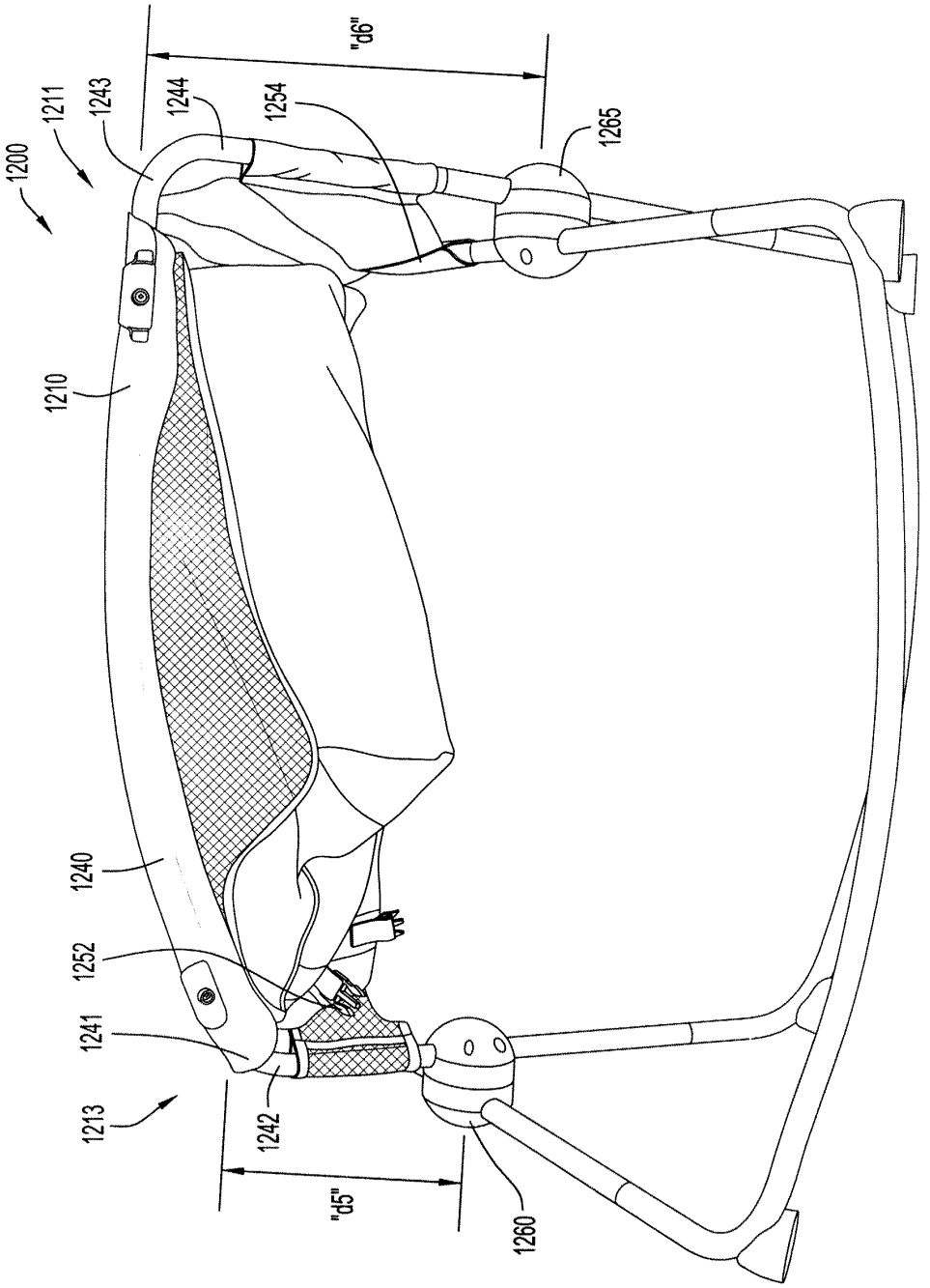
1242
1260

FIG.16


"d6"
1211
1243
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1254
1265
1200
1210
1240
1252
1241
1213
1242
"d5"
1260

FIG.17

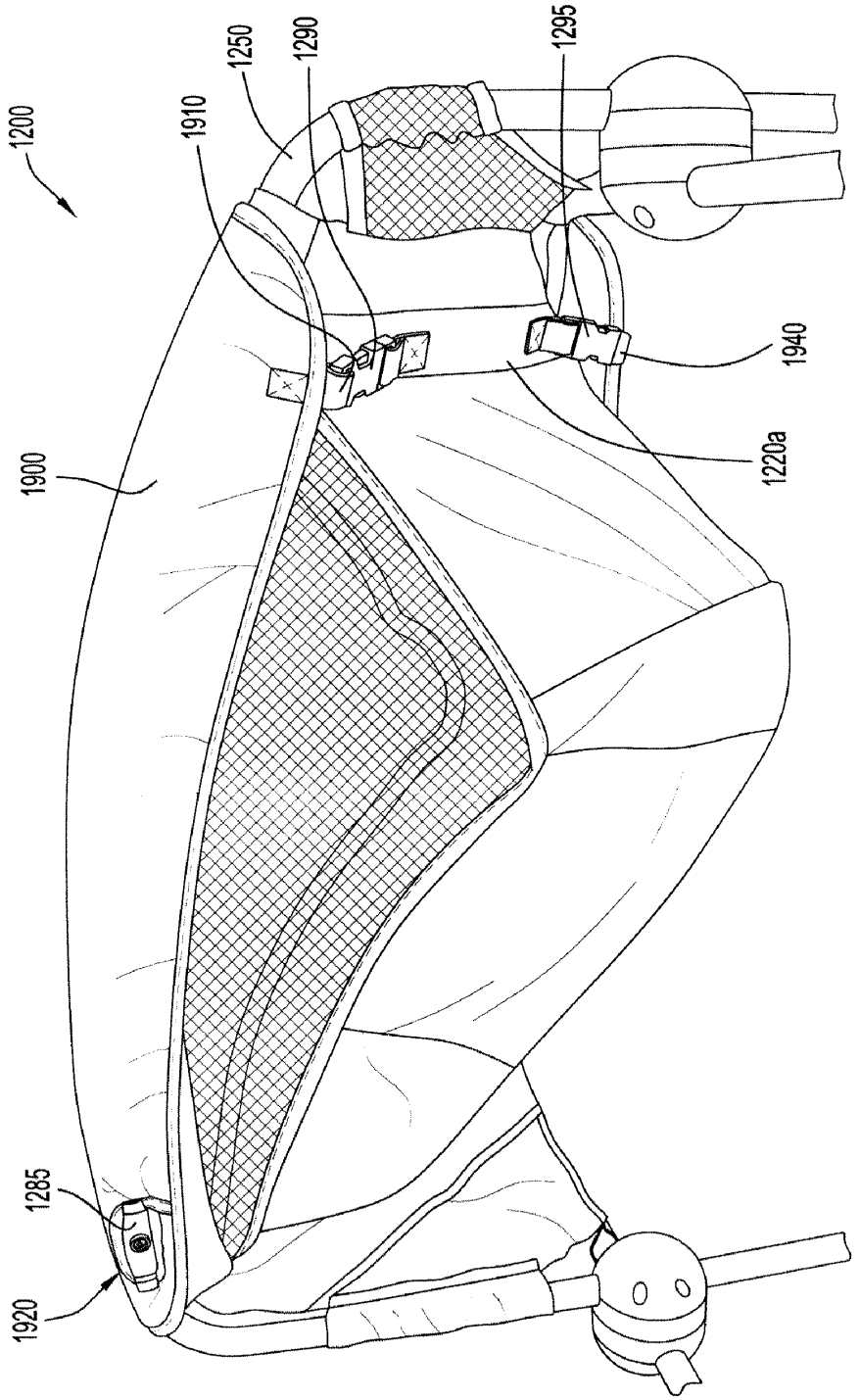

FIG.18

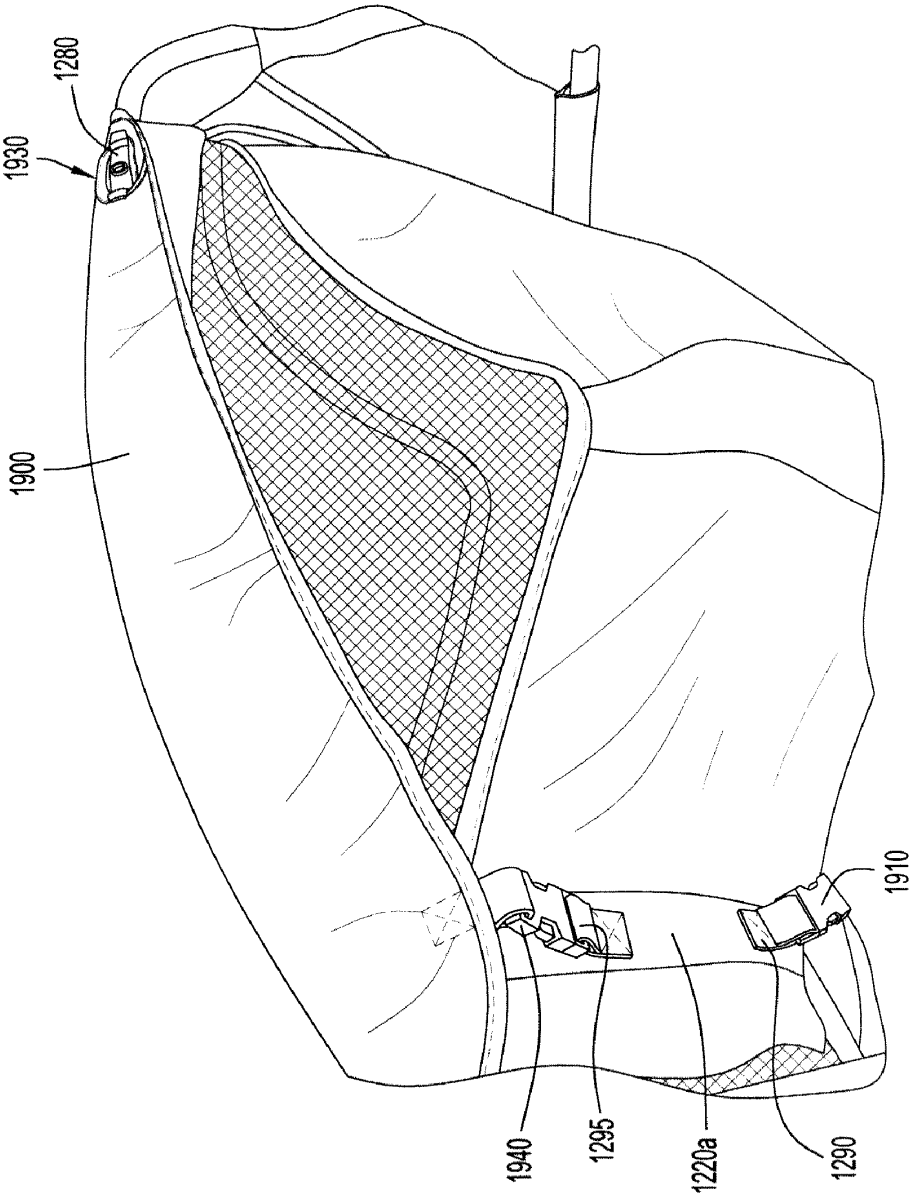

FIG.19

COLLAPSIBLE INFANT SUPPORT

FIELD OF THE INVENTION

[0001] The present invention relates to an infant support and, in particular, to a rocking infant support that folds from a deployed configuration to a collapsed configuration.

BACKGROUND OF THE INVENTION

[0002] Parents have available to them a myriad of infant support devices. For example, infant mats or gyms are easily portable, and provide an infant with a comfortable, sanitary place to rest. While infant mats can be easily packed away into a car or a diaper bag, such supports cannot be rocked or otherwise manipulated to soothe and pacify the infant. Bassinets and cradles, furthermore, are typically not easy to collapse for storage or transport. Conventional bassinets are not capable of being rocked and, while sturdy, are often expensive, especially when considering that they are generally only used during the infant's first months. As a result, strollers are often used as makeshift cribs when traveling. While many strollers can be quickly collapsed and stored into a trunk or back seat, they are generally not recommended for use with very small infants as a portable crib or cradle because the seat portion does not offer adequate support for the infant's back and neck.

[0003] Thus, it would be desirable to provide an infant support that is easily portable, securely supports and infant, and takes advantage of the relaxing and sleep inducing effects produced by gentle rocking motion.

SUMMARY OF THE INVENTION

[0004] The present invention is directed toward an infant support device including a frame and an infant seat. The frame includes a first frame member pivotally coupled to a second frame member via a hub assembly. In one embodiment, the frame includes two hub assemblies. The footers of the frame members are curved to permit the rocking of the frame along a supporting surface. The seat includes angled wall portions that form an offset support. With this configuration, a child placed within the seat is safely supported on the seat and is oriented at a predetermined support angle. The infant support device may be selectively reconfigured from a deployed configuration to a folded/stowed configuration, and vice versa.

BRIEF DESCRIPTION OF THE DRAWINGS

[0005] FIG. **1** illustrates a front perspective view of a rockable infant support in accordance with an embodiment of the invention.

[0006] FIG. **2** illustrates a front perspective view of the infant support shown in FIG. **1**, with the seat removed for clarity.

[0007] FIG. **3** illustrates a close-up view of stop members in accordance with an embodiment of the invention.

[0008] FIGS. **4**A and **4**B illustrate views of a hub in accordance with and embodiment of the invention. Specifically, FIG. **4**A illustrates a close-up perspective view of the forward hub, and FIG. **4**B illustrates an exploded view of the forward hub.

[0009] FIG. **5** illustrates a front view in plan of the frame shown in FIG. **2**.

[0010] FIGS. **6**A and **6**B illustrate the infant support oriented in its stowed configuration. Specifically, FIG. **6**A illustrates the frame of FIG. **5** oriented in its stowed configuration, and FIG. **6**B illustrates a side view in plan of the frame shown in FIG. **6**A.

[0011] FIGS. **7**A and **7**B illustrate the seat in accordance with an embodiment of the invention. Specifically, FIG. **7**A illustrates a top view in plan, and FIG. **7**B illustrates a side view in plan.

[0012] FIG. **8**A illustrates a top view of a seat brace in accordance with an embodiment of the invention.

[0013] FIG. **8**B illustrates a top view of a seat brace in accordance with another embodiment of the invention.

[0014] FIG. **8**C illustrates the seat brace of FIG. **8**B secured within the seat of FIG. **7**A.

[0015] FIG. **9** illustrates a front perspective view of the device shown in FIG. **1** oriented in its stowed configuration.

[0016] FIG. **10** illustrates a side perspective view of the infant support shown in FIG. **1**.

[0017] FIG. **11** illustrates a close-up perspective view of a mounting component of the infant support shown in FIG. **10**.

[0018] FIG. **12** illustrates another close-up perspective view of the mounting component shown in FIG. **11**.

[0019] FIG. **13** illustrates an end view of the mounting component shown in FIG. **11**.

[0020] FIG. **14** illustrates a side view of the mounting component shown in FIG. **11** and a portion of the seat of the infant support.

[0021] FIG. **15** illustrates a close-up view of the mounting component and seat portion shown in FIG. **14** assembled.

[0022] FIG. **16** illustrates a front perspective view of an alternative embodiment of a rockable infant support.

[0023] FIG. **17** illustrates a side view of the infant support shown in FIG. **16**.

[0024] FIG. **18** illustrates a bottom perspective view of components of the infant support shown in FIG. **16** and viewed from one side.

[0025] FIG. **19** illustrates another bottom perspective view of the components of the infant support shown in FIG. **18** and viewed from another side.

[0026] Like reference numerals have been used to identify like elements throughout this disclosure.

DETAILED DESCRIPTION OF THE INVENTION

[0027] The terms "support," "support device," and "support structure" are used to refer to any frame or support that is configured to provide support for an object. The terms "infant support," "infant support device," and "infant support structure" are used to refer to any frame or support that can be used to support an infant in a stationary manner or in a moving manner. Some exemplary infant support structures are swings, bassinets, playards, cribs, jumping devices, bouncers, high chairs, rockers, hammocks, etc. The terms "child" and "infant" may be used interchangeably herein. The terms "trunk" and "torso" may be used interchangeably herein.

[0028] Referring to FIG. **1**, the infant support **100** according to the present invention includes a frame assembly **110** that supports an infant seat assembly or receptacle **120** (also called an infant support portion) above a supporting surface. The frame assembly **110** includes mounting components to couple softgoods to the frame assembly **110**, as described in greater detail below. In FIG. **1**, only mounting components **1010** and **1020** are shown.

[0029] As shown in FIG. **2**, the frame assembly **110** includes a first frame member **210** and a second frame member **215**. The first frame member **210** defines a generally

rectangular structure including a rear lateral bar **220**A oriented in spaced, generally parallel relation from a forward lateral bar **225**A. Similarly, an upper crossbar or header **230**A is oriented in spaced, generally parallel relation from a lower crossbar or footer **235**A. Specifically, the header **230**A extends between the lateral bars **220**A, **225**A proximate their upper terminal ends, while the footer **235**A extends between the lateral bars **220**A, **225**A proximate their lower terminal ends. In this embodiment, the header **230**A has opposite ends or end portions **230**C and **230**D that have the same length and extend the same distance from the main portion of the header **230**A.

[0030] The second frame member **215** possesses a similar structure, having a rear lateral bar **220**B oriented in spaced, generally parallel relation from a forward lateral bar **225**B, as well as an upper crossbar or header **230**B, is oriented in spaced, generally parallel relation from a lower crossbar or footer **235**B. Specifically, the header **230**B extends between the lateral bars **220**B, **225**B proximate their upper terminal ends, while the footer **235**B extends between the lateral bars proximate their lower terminal ends. In this embodiment, the header **230**B has opposite ends or end portions **230**E and **230**F that have the same length and extend the same distance from the main portion of the header **230**B. As described below, in different embodiments, the lengths of the end portions of the headers can vary.

[0031] The headers **230**A, **230**B support the infant seat **120** (discussed in greater detail below). The footers **235**A, **235**B contact a supporting surface, such as the floor. In this embodiment, the headers **230**A, **230**B and/or the footers **235**A, **235**B may possess a generally arcuate shape having a predetermined radius of curvature. Preferably, the footers **235**A, **235**B possess an arcuate shape that defines a curved surface along which the frame assembly **110** may be rocked. With this configuration, the frame assembly **110** rocks longitudinally (front to back along an axis defined by the hubs, also discussed in greater detail below), providing a soothing effect to an infant supported by the seat.

[0032] The shape and dimensions of the frame members **210**, **215** of the frame assembly **110** may be any suitable for their described purpose. In the embodiment of FIG. **2**, the first frame member **210** possesses a height (measured between the header and footer) and width (measured between lateral bars) substantially equal to that of the second frame member **215**.

[0033] Referring to FIG. **2**, the components of frame member **210** are coupled together using swaged or tapered ends and spring-loaded buttons, such as valco buttons. In particular, the ends or end portions **230**C and **230**D of header **230**A are swaged so that they are insertable into the upper ends of lateral bars **220**A and **225**A. Similarly, the ends of footer **235**A are swaged so that they are insertable into the lower ends of lateral bars **220**A and **225**A. Valco buttons or tabs are inserted into the ends of the lateral bars **220**A and **225**A and include projections (such as projections **231** and **233** in FIG. **2**) that extend through openings in the lateral bars **220**A and **225**A and the corresponding header **230**A or footer **235**A to couple the particular components together. Similarly, the components of frame member **215** are configured and assembled in the same manner.

[0034] The frame assembly **110** may further include one or more stop members **240** placed at predetermined locations along the frame members **210**, **215**. In the illustrated embodiment, the first frame member **210** includes two stop members **240**, each being positioned proximate the longitudinal ends of its associated footer **235**A and generally aligned with a corresponding lateral bar **220**A or **225**A. Similarly, the second frame member **215** includes two stop members **240**, each being positioned proximate the longitudinal ends of its footer **235**B and generally aligned with a corresponding lateral bar **220**B or **225**B.

[0035] The stop members **240** are configured to selectively engage the supporting surface to prevent over rotation of the infant support **100** while rocking longitudinally along the supporting surface. FIG. **3** is close-up view of a stop member **240** in accordance with an embodiment of the invention. As illustrated, the stop member **240** includes a top surface **310** and a bottom surface **320**. The top surface **310** is generally contoured to the corner curvature of its associated frame member **210**, **215**. The bottom surface **320**, in contrast, may be generally planar; consequently, the stop member **240** possesses a generally inclined structure having an interior end **330** with a height that is less than the height of an exterior end **340**. In operation, the bottom surface **320** contacts the supporting surface as the infant support **100** is rocked/rotated thereon, preventing over rotation of the frame assembly **110** in the forward or rearward direction.

[0036] The frame members **210**, **215** are coupled to each other via a hub assembly. Referring back to FIG. **2**, the infant support device **100** includes a first or forward hub assembly **250** and a second or rearward hub assembly **255**. In one embodiment, the forward hub **250** may be generally coaxial with the rearward hub **255** along a substantially horizontal axis. In an alternative embodiment, the forward hub **250** may be vertically offset from the rearward hub **255**. The hub assemblies **250**, **255** secure the frame members **210**, **215** such that the frame members intersect. Referring to FIG. **2**, the hub assemblies **250**, **255** are coupled to the frame members **210**, **215** in such a way that the substantially similarly configured frame members **210**, **215** can collapse proximate to each other. As shown, hub assembly **250** retains lateral bar **225**A outside of lateral bar **225**B and hub assembly **255** retains lateral bar **220**A outside of lateral bar **220**B. This offset configuration allows the frame members **210**, **215** to be collapsed in a reduced profile and provides overlapping frame portions for the support structure for the device **100**.

[0037] FIGS. **4**A and **4**B show the structure of the forward hub **250** in accordance with an embodiment of the invention. The forward hub **250** includes a first or exterior subassembly **405** and a second or interior subassembly **410**. The exterior subassembly **405** includes an exterior or annular cap **415** that cooperates with a first or outer housing **420** to capture the forward lateral bar **225**A of the first frame member **210**. The second subassembly **410** further includes a second or inner housing **425** that cooperates with an interior or closed cap **430** to capture the forward lateral bar **225**B of the second frame member **215**. Thus, the forward lateral bars **225**A, **225**B are disposed in spaced relation along substantially parallel planes. These substantially parallel planes are vertically oriented. The rearward hub **255** includes a structure similar to that of the forward hub **250**, orienting the rearward lateral bars **220**A, **220**B in parallel, spaced relation.

[0038] As mentioned above, the hubs **250**, **255** may position the frame members **210**, **215** such that the frame members are longitudinally offset (seen in FIG. **6**B) with respect to each other. That is, the rearward lateral bar **220**A of the first frame member **210** is captured within the interior subassembly **410** of the rearward hub **255**, while the forward lateral bar **225**A of the first frame member **210** is captured within the

exterior subassembly **405** of the forward hub **250**. Conversely, the rearward lateral bar **220**B of the second frame member **215** is captured within the exterior subassembly **405** of the rearward hub **255**, while the forward lateral bar **225**B of the second frame member **215** is captured within the interior subassembly **410** of the forward hub **250**.

[0039] The first subassembly **405** may be rotatably coupled to the second subassembly **410** (or vice versa) to permit the rotation of each frame member **210**, **215** with respect to each other. Specifically, the first subassembly **405** rotates about the hub axis such that it can be rotationally displaced with respect to the second subassembly **410** (or vice versa). As a result, the frame members **210**, **215** may be pivoted to reorient the infant support **100** from a deployed or expanded configuration to a collapsed or stowed configuration.

[0040] In addition, one or both of the hubs **250**, **255** may further include a lock mechanism that selectively secures the subassemblies **405**, **410** with respect to each other, preventing their rotation and securing the frame members **210**, **215** in a predetermined orientation. Referring to FIG. **4**B, the components of an embodiment of the hub assembly **250** is illustrated. Hub assembly **255** has similar components to hub assembly **250**.

[0041] Referring to FIG. **4**B, the hub assembly **250** includes an axially displaceable gear **440** and a biasing member **445** (e.g., a spring) captured between the exterior housing **420** and the interior housing **425**. The exterior housing **420** is internally keyed such that it accepts the gear in predetermined rotational positions. By way of specific example, the gear **440** (which is generally coaxial with the hub **250**) may include a plurality of slots angularly spaced along the gear. The exterior housing **420**, moreover, may include a plurality of angularly spaced teeth or ribs extending from the interior surface of the housing. The slots of the gear **440** are configured to receive the ribs of the exterior housing **420** when aligned therewith. With this configuration, when the gear **440** is oriented in a predetermined rotational position, the slots and ribs align, resulting in the meshed engagement of the gear **440** and the exterior housing **420**.

[0042] The interior space of the interior housing **425**, in contrast, permits the rotation of the gear **440** when the gear **440** is positioned therein. Thus, when the gear **440** is oriented within the interior housing **425**, rotation between the subassemblies **405**, **410** is permitted.

[0043] The biasing member **445** biases the gear **440** into engagement with the exterior housing **420**. The annular cap **415** includes a depressible actuator **435** operable to axially displace the gear from its normal, engaged position (meshed with exterior housing **420**), to its disengaged position (i.e., positioned within interior housing **425**). In operation, engaging the actuator **435** displaces the gear **440** from the exterior housing **420** and into the interior housing **425**. This, in turn, releases the first subassembly **405**, permitting its rotation about the hub axis with respect to the second subassembly **410**. Once the ribs and slots align, the biasing member **445** drives the gear back into engagement with the exterior housing, rotationally locking the subassemblies **405**, **410**.

[0044] Referring to FIG. **4**B, the interior cap **430** includes an edge **431** that defines a notch **433** that receives forward lateral bar **225**B. The interior housing **425** includes an edge **427** that defines a notch **429** that receives forward lateral bar **225**B. Thus, the forward lateral bar **225**B is captured between the interior cap **430** and the interior housing **425**. Similarly, the annular cap **415** has an edge **417** that defines a notch **419** that receives forward lateral bar **225**A and the exterior housing **420** has an edge **421** that defines a notch **423** that receives forward lateral bar **225**A. Thus, the forward lateral bar **225**A is captured between the annular cap **415** and the exterior housing **420**.

[0045] With the above-described configuration, the frame assembly **110** may be selectively rotated between a deployed configuration to a stowed configuration. As illustrated in FIG. **5**, in the deployed configuration, the subassemblies **405**, **410** position the upper portions of the frame members **210**, **215** (i.e., the portions above the hub assemblies **250** and **255**) at a predetermined deployment angle A with respect to each other (e.g., 45°). Engaging or depressing the actuator **435** disengages the lock to release the subassemblies **405**, **410** of the hubs assemblies **250**, **255**, permitting the rotation of the first frame member **210** and/or the second frame member **215**.

[0046] Specifically, applying a force to the headers **230**A, **230**B (along the directions of arrows R) rotates the first frame member **210** toward the second frame member **215**. The frame members **210**, **215** are rotated until the stowed configuration is achieved, such as the configuration illustrated in FIGS. **6**A and **6**B. Referring to FIGS. **6**A and **6**B, which are end and side views, the frame members **210**, **215** are placed proximate to each other in this collapsed or stowed configuration.

[0047] The seat or seat assembly **120** receives and supports an infant therein. The seat **120** may possess a generally elongated shape formed to hold an infant when the infant support **100** is in its deployed configuration. The seat **120** is suspended from the frame assembly **110**. Specifically, the seat **120** is supported by the headers **230**A, **230**B of the frame members **210** and **215**, respectively, such that the longitudinal axis of the seat **120** is oriented substantially parallel to the longitudinal axis of the frame assembly **110**. That is, the longitudinal axis of seat **120** is oriented generally parallel to the rocking axis so that a child positioned in the receptacle and facing forward will rock from front-to-back in the manner of a rocking chair.

[0048] Referring to FIG. **7**A, the seat **120** includes a first longitudinal or side wall **710** and a second longitudinal or side wall **715** opposite to the first side wall **710**. As illustrated, the first side wall **710** is coupled to the header **230**A of first frame member **210** and the second side wall **715** is coupled to the header **230**B of the second frame member **215**. The side walls **710**, **715** are coupled to a bottom wall or body **720**. Specifically, the first side wall **710** extends distally (downward) from the header **230**A of the first frame member **210** and connects to the first longitudinal edge **725** of the bottom wall **720** (e.g., via stitching). Similarly the second side wall **715** extends distally from the header **230**B of the second frame member **215** and connects to second longitudinal edge **730** of the bottom wall **720**. Each of the side walls **710** and **715** may include some mesh material.

[0049] The bottom wall **720** is defined by a first or forward transverse end **735** and an opposed second or rearward transverse end **740**, each extending between longitudinal edges **725**, **730**. The bottom wall **720** is formed by a first or trunk portion or torso portion **745** operable to support the trunk or torso of an infant and a second or foot portion **750** operable to support the legs and/or feet of the infant.

[0050] The seat **120** is contoured to suspend an infant in a predetermined orientation. In one embodiment, the seat **120** possesses an L-shaped sling structure (when viewed from the side), with the trunk or torso portion **745** being oriented at an

acute angle with respect to the foot portion **750**. In other embodiments, the angle between the trunk or torso portion **745** and the foot portion **750** can vary.

[0051] As shown in FIG. **7**B, the bottom wall **720** of the seat **120** slopes downward (away from the headers **230**A, **230**B) as it extends longitudinally along the frame assembly **110** (from back to front). Specifically, the trunk portion **745** of the bottom wall **720** slopes downward a predetermined distance h**1** to a lowermost point **755**. By way of example, the trunk portion **745** may possess an incline of approximately 25°-35° (e.g., about 30°). The foot portion **750** of the bottom wall **720** slopes upward (toward the headers **230**A, **230**B) a predetermined distance h**2** from point **755** such that the first/forward transverse end **735** of the bottom wall **720** is located at approximately the same height as the second/rearward transverse end **740** of the bottom wall.

[0052] This trunk portion **745** possesses a length (longitudinal dimension) that is greater than the length (longitudinal dimension) of the foot portion **750**. With this described configuration, the bottom wall **720** possesses a lowermost point **755** that is longitudinally offset along the seat. That is, the lowermost point **755** is located closer to the first/forward transverse end **735** (and, as such, the forward hub **250**) than to the second/rearward transverse end **740**. This difference in length provides greater support area for the trunk or torso of an infant and less for the legs of the infant, which often may be folded while resting or sleeping.

[0053] Referring to FIG. **7**B, the device **100** includes fabric portions **960** and **970** that are coupled to the frame members **210** and **215**. Fabric portion **960** has two sleeve portions that are configured to receive lateral bars **225**A and **225**B. The fabric portion **960** covers the area between lateral bars **225**A and **225**B when the frame assembly **110** is in its deployed configuration, thereby preventing the insertion of any object or body part in the area and reducing the likelihood of an pinching or capturing of such an object or body part. Similarly, fabric portion **970** has two sleeve portions that are configured to receive lateral bars **220**A and **220**B. The fabric portion **970** covers the area between lateral bars **220**A and **220**B when the frame assembly **110** is in its deployed configuration.

[0054] The seat **120** may be configured to collapse or fold when the frame assembly is reconfigured from its deployed/open configuration (FIG. **1**) to its collapsed/stowed configuration. In a preferred embodiment, this is accomplished by forming the walls **710**, **715**, **720** of the seat **120** individually or collectively out of flexible/pliable softgoods material (e.g., natural or synthetic fabrics). By way of specific example, the seat **120** may be formed of fabric and/or mesh sheets, with the side walls **710**, **715** folded around the headers **230**A, **230**B and secured releasably thereto by releasable fasteners (e.g., snap fasteners) or secured permanently thereto (e.g., via sewing). With this configuration, the seat **120** is suspended from the headers **230**A, **230**B, providing a hammock or sling effect.

[0055] The seat **120** may further include a substantially rigid or resilient support brace or insert member configured to provide support for an infant and/or to maintain the side walls **710**, **715** in spaced relation when an infant is positioned on the seat **120**. The support brace **800** may possess any shape and dimensions suitable for its described purpose (e.g., to maintain the orientation and position of an infant placed in the seat **120**). By way of example, the support brace **800** may possess a generally oval or elliptical shape, and may be generally contoured to the slope of the back wall portion **745** of the bottom wall **720**. The brace **800** may possess a width substantially equal to that of the back wall portion **745**. Stated another way, the transverse dimension of the support brace may be substantially equal to the transverse dimension of the trunk portion **745** of the bottom wall **720** (measured between longitudinal edges **725**, **730**). Similarly, the longitudinal dimension of the brace **800** may be substantially equal to the longitudinal dimension of the back wall **745**, extending from second/rearward transverse edge **740** to the lowermost point **755**.

[0056] Referring to FIG. **8**A, the brace **800** may be in the form of a band having an exterior edge **810** and an interior edge **820** that defines a central opening **830**. The band functions as a frame for the trunk portion **745** of the bottom wall **720**, with the infant being positioned within the opening **830**. In one embodiment, the brace **800** may have a curved configuration when viewed from the side. In another embodiment, the brace **800** may be substantially planar.

[0057] Referring to FIG. **8**B, the brace **800** may be in the form of a generally continuous, contoured planar member including a central panel **850** in communication with upward-sloping (curved) side walls **860**A, **860**B running longitudinally along the panel, and an upward-sloping transverse bottom wall **870** running along the forward transverse end of the panel. The central panel **850** may include one or more apertures **880** configured to provide airflow with the apertures **880** being located beneath the trunk or torso of the infant. With this configuration, the brace **800** provides a contoured, rigid support for an infant placed within the seat **120**.

[0058] The support brace **800** may be affixed to the seat **120** via an internal receptacle formed into the bottom wall **720** by multiple pieces of fabric. By way of example, the trunk portion **745** of the bottom wall **720** may define a pocket or sleeve that receives the support brace **800**. That is, the trunk portion **745** may include a first fabric member and a second fabric member connected to the first fabric member so as to define a cavity therebetween. The cavity possesses dimensions sufficient to receive the support brace **800** (e.g., the cavity may possess dimensions slightly larger than the dimensions of the support brace). Referring to FIG. **8**C, the support brace **800** is illustrated in position within the seat **120**.

[0059] The support brace **800** may be permanently secured within the receptacle. In one embodiment, the receptacle may be sewn closed to retain the support brace **800** therein. In another embodiment, the support brace **800** may be coupled directly to the fabric by stitching or some other mechanism or technique. Alternatively, the support brace **800** may releasably secured within the receptacle to permit its selective insertion into and removal from the seat **120**. For example, the trunk portion **745** of the bottom wall **720** may include an opening selectively secured by snaps, buttons, and/or a zipper.

[0060] The foot portion **750** of the bottom wall **720** preferably does not include a support brace **800**. It should be understood, however, that the foot portion **750** may be provided with a brace having a structure similar to the support brace described above.

[0061] In operation, an infant is placed within the seat such that the back of the infant rests against (is supported by) the trunk portion **745** of the bottom wall **720** and the feet are oriented within foot portion **750** of the bottom wall. In this orientation, the infant is in a seated, but reclined position, facing the forward hub **250**. Placing the infant face down, or

placing the trunk of the infant within the foot portion of the bottom wall is not preferred, since injury to the infant may result.

[0062] The folding of the device is explained with reference to FIGS. **1** and **9**. Initially, the infant support **100** begins in its deployed configuration (FIG. **1**). The actuator **435** of each hub assembly **250**, **255** is engaged, releasing the subassemblies **405**, **410** of the hub assemblies **250**, **255** and permitting relative rotation of the frame members **210**, **215** as described above. The headers **230**A, **230**B are rotated inward until the frame members **210**, **215** are oriented in their stowed configuration (e.g., when the headers **230**A, **230**B are oriented generally parallel to each other). In this position, the lock mechanism is engaged, securing the frame members **210**, **215** in their stowed position as described above.

[0063] The brace **800** may be formed from resilient or substantially rigid materials. By way of example, the brace may be formed from plastic. The brace **800**, moreover, may possess a unitary (continuous/one-piece) structure or may be formed from multiple pieces connected together.

[0064] Referring to FIG. **7**A, the seat **120** may include a strap assembly (as illustrated) and other restraint mechanisms to secure the infant within the seat. In this embodiment, the strap assembly **1100** may include strap portions **1110**, **1112**, **1114**, and **1116** that are coupled together using buckles **1120** and **1122** and a main strap portion **1130** with a coupling portion **1132**. The strap portions **1110**, **1112**, **1114**, **1116** and **1130** may be inserted through openings in the softgoods or coupled to the upper surface of the softgoods such as by sewing or stitching or other coupling method or technique. In an alternative embodiment, only two strap portions are used with the seat **120**.

[0065] Referring to FIGS. **10-15**, the mounting or coupling of a softgoods portion to the frame assembly **110** of device **100** is illustrated. The softgoods may be used to provide an additional layer of support for the infant. Referring to FIG. **10**, a softgoods or padded portion **900** is removably coupled to the frame assembly **110**. As a result, the softgoods **900** can be easily removed from the frame assembly **110** and washed and cleaned. In this embodiment, the softgoods **900** has several coupling portions **910**, **920**, **930**, and **940** that are located at spaced apart positions around the softgoods **900**. Each of the coupling portions **910**, **920**, **930**, and **940** is similarly configured and therefore the following description relating to coupling portion **910** applies to the other coupling portions **920**, **930**, and **940**.

[0066] Coupling portion **910** includes an edge **912** formed in the body **902** of the softgoods **900**. The edge **912** defines and opening **914** that extends through the body **902**. A binding or layer of fabric **916** (see FIG. **15**) is sewn around the edge **912** to prevent the edge **912** from unraveling. The softgoods **900** includes coupling portions **920**, **930**, and **940** that are similarly configured with openings **924**, **934**, and **944**, respectively.

[0067] The frame assembly **110** includes a mounting assembly **1000** that includes several mounting components **1010**, **1020**, **1030**, and **1040** (shown throughout FIGS. **10-15**). The mounting components **1010**, **1020**, **1030**, and **1040** are located on the headers **230**A, **230**B in locations that correspond to the coupling portions **910**, **920**, **930**, and **940** of the softgoods **900**. In particular, mounting components **1010**, **1020**, **1030**, and **1040** are aligned with coupling portions **910**, **920**, **930**, and **940**, respectively.

[0068] Referring to FIG. **11**, a close-up view of mounting component **1010** and header **230**A is shown. The seat **120** includes a fabric portion **948** that is coupled to the headers **230**A, **230**B. On both sides of the fabric portion **948**, there is a sleeve **950** that defines a channel **952** and is coupled to the fabric portion **948** at end **954**. The sleeve **950** is configured to be slid onto one of the headers **230**A, **230**B. The mounting component **1010** is positioned proximate to the sleeve **950** and then coupled to the header **230**A using a connector. The other mounting components **1020**, **1030**, and **1040** are similarly coupled to the corresponding headers **230**A, **230**B via connectors.

[0069] Referring to FIGS. **12** and **13**, a perspective view and an end view of mounting component **1010** are illustrated, respectively. In this embodiment, mounting component **1010** is molded plastic and has a body portion **1050** with ends **1052** and **1054** and sides **1053** and **1055**. The body portion **1050** has a curved configuration that matches the configuration of the portion of the frame to which the mounting portion **1010** is coupled. Integrally formed with the body portion **1050** are projections **1060** and **1062**. The projections **1060** and **1062** have ends **1064** and **1066**, respectively, and extend in opposite directions from each other. In another embodiment, the projections **1060** and **1062** can extend from the sides **1053** and **1055** of the body portion **1050** instead of the ends **1052** and **1054**.

[0070] The body portion **1050** includes a boss **1056** defining an opening **1058** through which a connector **1059** (such as a screw) is inserted to couple the mounting component **1050** to the frame assembly **110**. The body portion **1050** has an inner surface **1070** that defines a receptacle **1072** and is placed in contact with the header **230**A or fabric (such as sleeve **950**) mounted on the header **230**A. The body portion **1050** also has an outer surface **1074** that can be engaged by a portion of the softgoods **900**.

[0071] Referring to FIG. **14**, in this embodiment, the projections **1060** and **1062** define areas or regions **1067** and **1068**, respectively. To retain the softgoods **900** on the mounting component **1010**, the length of the opening **914** (distance "d**2**") is less than the length of the mounting component **1010** as measured from the ends **1064** and **1066** of the projections **1060** and **1062** (distance "d**1**"). When the softgoods or fabric portion **900** is moved so that the coupling portion **910** is aligned with the mounting component **1010**, the opening **914** is manipulated so that the projections **1060** and **1062** extend therethrough and the edge **912** is located beneath the projections **1060** and **1062** and in areas **1067** and **1068**. Referring to FIG. **15**, the projections **1082** and **1084** extending from a body portion **1080** of mounting component **1020** extend over the binding **916**, thereby coupling the softgoods **900** to the mounting component **1020** and the frame assembly **110**.

[0072] The mounting assembly **1000** facilitates the coupling and decoupling of the softgoods **900** from the frame assembly **110**. In various embodiments, the quantity of mounting components used with a particular frame can vary. For example, in one embodiment, only one mounting component may be included on each side of a frame. In another embodiment, the mounting components may be spaced relatively equally about a substantially circular frame. In another embodiment, each mounting component may include three or four projections extending from a body portion. Thus, the mounting assembly including mounting components can be

used to couple or mount a softgoods or fabric portion to a frame having any shape or configuration and used for any type of infant support structure.

[0073] Referring to FIGS. **16** and **17**, an alternative embodiment of an infant support device or structure is illustrated. In this embodiment, the device or structure **1200** includes a frame assembly **1210** that includes an infant seat assembly or receptacle **1220** with a head stop or padded portion **1222** that can provide additional support and/or cushioning for an infant. In this embodiment, the frame assembly **1210** includes a first frame member **1230** and a second frame member **1235**. The frame members **1230**, **1235** are coupled together via hubs or hub assemblies **1260** and **1270** which facilitate the movement or pivoting of the frame members **1230**, **1235** relative to each other, thereby allowing the frame assembly **1210** to be deployed or collapsed. The frame members **1230**, **1235** are substantially similar to frame members **210**, **215** described above with the exception of the upper crossbars or headers **1240** and **1250**.

[0074] As discussed above, headers **230**A and **230**B of frame assembly **110** have end portions **230**C, **230**D and **230**E, **230**F, respectively, that have the same length. The header **1240** has end portions **1242** and **1244** that have different lengths. Similarly, header **1250** has end portions **1252** and **1254** that have different lengths. Preferably, the lengths of end portions **1242** and **1252** are the same or substantially the same and the lengths of end portions **1244** and **1254** are the same or substantially the same. The longer end portions **1244** and **1254** result in the upper rear corners **1243** and **1253** of the headers **1240** and **1250** being a greater distance from the hub assembly **1270** than the upper front corners **1241** and **1251** of the headers **1240** and **1250** are spaced from the hub assembly **1260**.

[0075] Referring to FIG. **17**, the upper front corners **1241** and **1251** are spaced at a distance "d**5**" from hub assembly **1260** and upper rear corners **1243** and **1253** are spaced at a distance "d**6**" from hub assembly **1270**. Distance "d**6**" is greater than distance "d**5**" and the frame assembly **1210** has a tapered or sloped configuration from the rear **1211** of the frame assembly **1210** to the front **1213** of the frame assembly **1210**. This sloped configuration results in the rear **1211** being higher than the front **1213** relative to a support surface, and the seat portion **1220** having a higher upper end which provides additional support length for an infant and increases the angle of inclination of the trunk or torso portion of the seat portion **1220** to position an infant in a more upright orientation.

[0076] The seat portion **1220** may be substantially similar to the infant seat **120** as described above, and with the addition of the padded portion **1222**. Accordingly, receptacle **1220** is suspended from the headers **1240** and **1250**, providing a hammock or sling effect. The mounting or coupling of a softgoods portion to the frame assembly **1210** may be similar to that described above and shown in FIG. **15**. The softgoods may be used to provide an additional layer of support for the infant.

[0077] Referring to FIGS. **18** and **19**, a softgoods or padded portion **1900** is removably coupled to the frame assembly **1210**. As a result, the softgoods **1900** can be easily removed from the frame assembly **1210** and washed and cleaned. The softgoods **1900** includes several coupling portions **1910**, **1920**, **1930**, and **1940** that are located at spaced apart positions around the softgoods **1900**. In one embodiment, the coupling portions **1920** and **1930** may be substantially the same as coupling portions **920** and **930**, and the coupling portions **1910** and **1940** may be configured as another type of fastener member. For example, coupling portions **1910** and **1940** may be configured as side release buckle components, cam or spring buckles, snaps, hook and loop fastener material, or some other fastening mechanism.

[0078] The frame assembly **1210** includes a mounting assembly that includes mounting components located on headers **1240** and **1250** in locations that correspond to the coupling portions **1920** and **1930**. For example, headers **1240** and **1250** may include mounting components **1280**, **1285**, respectively, as shown in FIGS. **16**, **18** and **19**. Each of mounting components **1280**, **1285** has a configuration substantially similar to the mounting component **1010**, as described above. Accordingly, coupling portions **1930**, **1920** may be aligned with and releasably attached to mounting components **1280**, **1285**, respectively.

[0079] The seat portion **1220** may include mounting components that align with the coupling portions **1910** and **1940**. For example, mounting components **1290**, **1295** may extend outwardly from an underside **1220***a* and are aligned with coupling portions **1910**, **1940** when softgoods **1900** is disposed on the seat portion **1220**, as shown in FIGS. **18** and **19**. For example, the mounting components **1290**, **1295** may be configured as corresponding side release buckle components connected to the seat portion **1220** via webbing, or webbing releasably securable to cam or spring buckles, or associated hook and loop fastener material, or the like.

[0080] The mounting assembly facilitates the coupling and decoupling of the softgoods **1900** from the frame assembly **1210**. In various embodiments, the quantity of coupling portions and associated mounting components used with a particular frame can vary. Moreover, all mounting components may be identically configured, or have different configurations. Thus, the mounting assembly including mounting components can be used to couple or mount a softgoods or fabric portion to a frame having any shape or configuration and used for any type of infant support structure.

[0081] In an alternative embodiment, the lengths of the lateral bars at one end of the frame assembly (such as the rear end) can be longer than the lateral bars at the other end of the frame assembly (such as the front end). This difference in length would enable the end portions of the headers to have the same length, but the upper corners of the headers at the rear of the frame assembly can be spaced further from the rear hub assembly than the front hub assembly, thereby giving the headers and the frame assembly a sloped or tapered configuration from rear to front.

[0082] While the invention has been described in detail and with reference to specific embodiments thereof, it will be apparent to one skilled in the art that various changes and modifications can be made therein without departing from the spirit and scope thereof. For example, the infant support may be formed of any suitable materials. Each hub **250**, **255** may include a locking mechanism configured to selectively lock the subassemblies. Alternatively, only one hub **250**, **255** may include the locking mechanism. The locking mechanism may be keyed to lock the hubs **250**, **255** in only the deployed and stowed configurations. Alternatively, the locking mechanism may be keyed to permit locking of the hubs at orientations falling in between the deployed and stowed configurations. Other mechanisms providing for the rotation and locking of the frames may be utilized.

[0083] Thus, it is intended that the present invention cover the modifications and variations of this invention that come within the scope of the appended claims and their equivalents. It is to be understood that terms such as "left", "right" "top", "bottom", "front", "rear", "side", "height", "length", "width", "upper", "lower", "interior", "exterior", "inner", "outer" and the like as may be used herein, merely describe points of reference and do not limit the present invention to any particular orientation or configuration.

We claim:

1. An infant support structure, comprising:

a frame assembly including:

a first frame member, and

a second frame member pivotally coupled to the first frame member, each of the first frame member and the second frame member including a footer configured to rock on a support surface; and

a infant support portion coupled to the frame, the support portion defining a receptacle in which an infant may be placed, the support portion comprising a first end, a second end opposite to the first end, a first side, and a second side opposite to the first side, the first side being coupled to the first frame portion, the second side being coupled to the second frame portion, the support portion having a lowermost point, the lowermost point being located closer to the second end than to the first end.

2. The infant support structure of claim **1**, wherein the first end and the second end of the support portion are located at different heights relative to a support surface.

3. The infant support structure of claim **1**, wherein the support portion is a fabric member, the fabric member being suspended from the first frame portion and the second frame portion.

4. The infant support structure of claim **1**, wherein the support portion includes a first side portion, a second side portion, and a body portion extending from the first end to the second end and being coupled to the first side portion and to the second side portion.

5. The infant support structure of claim **4**, further comprising:

an insert member being configured to be placed proximate to the body portion, the insert member maintaining the first side portion and the second side portion spaced apart when an infant is placed in the receiving area.

6. The infant support structure of claim **5**, wherein the insert member has a width and the body portion has a width, the width of the insert member being substantially the same as the width of the body portion.

7. The infant support structure of claim **1**, wherein the frame assembly further comprises a first hub and a second hub, the first frame member being coupled to the first hub and the second hub, the second frame member being coupled to the first hub and the second hub, the first and second hubs permitting the rotation of the first frame member with respect to the second frame member; and at least one of the first hub and the second hub includes a locking mechanism configured to selectively release the first frame member to permit the rotation of the frame members toward each other to collapse the frame assembly.

8. A rocking hammock, comprising:

a frame assembly including:

a first rocking portion including a curved lower end configured to rock on a support surface;

a second rocking portion being coupled to the first rocking portion, the second rocking portion including a curved lower end configured to rock on a support surface; and

an infant seat supported by the frame, the infant seat including:

a flexible support portion, the support portion being coupled to the first rocking portion and to the second rocking portion, the support portion defining a receiving area in which an infant may be placed, the support portion defining a width; and

a resilient insert member, the insert member disposed proximate to the support portion, the insert being configured to maintain the width of the support portion when an infant is placed in the receiving area.

9. The rocking hammock of claim **8**, wherein the insert member comprises a unitary band that defines a central opening.

10. The rocking hammock of claim **8**, wherein the infant seat has a first end and a second end opposite to the first end, the insert member being located closer to the first end than to the second end.

11. An infant support structure comprising:

a frame including at least one rocking portion configured to engage a support surface; and

a receiving assembly coupled to the frame, the receiving assembly defining a receptacle in which an infant may be placed, the receiving assembly including a flexible support member having a trunk portion and a foot portion coupled to the back portion, the trunk portion and the foot portion being disposed at an angle relative to each other, the trunk portion including a resilient brace configured to maintain the orientation and position of the infant placed in the receptacle.

12. The infant support structure of claim **11**, wherein the resilient brace is fixedly coupled to the support member.

13. The infant support structure of claim **12**, wherein the support member includes a first fabric member and a second fabric member, the first fabric member and second fabric member defining a cavity therebetween, the resilient brace being located in the cavity.

14. The infant support structure of claim **11**, wherein the trunk portion has a length and the foot portion has a length, and the length of the trunk portion being greater than the length of the foot portion.

15. The infant support structure of claim **14**, wherein the trunk portion includes sides and a bottom, and the resilient brace extends substantially along the length, sides, and bottom of the trunk portion.

16. A rocking infant support comprising:

a frame assembly including:

a first frame member comprising:

a footer bar operable to rock along a supporting surface, and

a header bar oriented in spaced relation from the footer bar, and

a second frame member comprising:

a footer bar operable to rock along a supporting surface, and

a header bar oriented in spaced relation from the footer bar; and

a flexible seat assembly suspended from the frame assembly, the flexible seat comprising a flexible wall operable to support an infant, wherein the wall includes a trunk

portion coupled to a foot portion, the trunk portion being oriented at an acute angle with respect to the foot portion.

17. The rocking infant support of claim **16** further comprising:

a substantially rigid support brace housed within the flexible wall of the seat assembly.

18. The rocking infant support of claim **16**, wherein the frame assembly further comprises a hub assembly, the hub pivotally couples the first frame member to the second frame member in an intersecting relationship, and the frame assembly pivots between an open configuration to a closed configuration.

19. The rocking infant support of claim **18**, wherein the hub assembly comprises:

a first hub member, and

a second hub member oriented coaxially with the first hub member, the first frame member being longitudinally offset from the second hub member.

20. The rocking infant support of claim **16**, wherein the flexible seat assembly further comprises:

a first longitudinal wall coupled to the header bar of the first frame member, and

a second longitudinal wall coupled to the header bar of the second frame member, the flexible wall is a bottom wall oriented between the first and second longitudinal walls.

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